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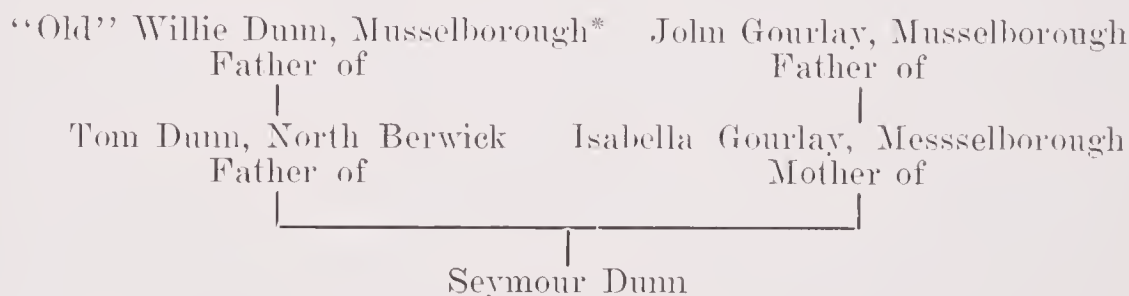
SEYMOUR DUNN
Author

AUTHOR'S GENEALOGY

The articles contained herein are the result of the life study handed down by many generations.

“Old” Willie Dunn, the famous Professional Golfer of Musselborough, Scotland, who played in the Great Golf Match of 1849, with his brother Jamie Dunn against Allen Robinson and Tom Morris for four hundred pounds sterling a side, was the father of the yet more famous Tom Dunn of North Berwick, Scotland, who from the time he was 20 years old till he died at the age of 52 was universally acknowledged the leading authority on golf. I am the youngest son of Tom Dunn. I was born at North Berwick, Scotland, March 11th, in the year of 1882 and, as my forefathers did, I cut my first teeth on a golf club.

On my mother's side were the Gourlays of Musselborough, and my mother Isabella Gourlay, true to her family traditions, was the greatest woman golfer of her day. Her father, John Gourlay, was the famous leather and feather golf ball maker. He was also a golfer of great renown.



Back farther still on my mother's side there was a Douglas Gourlay, who was appointed teacher of golf to James V of Scotland. All these family connections have been a great help in preparing me for the great object of my life, which is to get down to the very root of this great problem, “The Fundamentals of Golf”. I have not indulged in practicing my own play for the capture of championship honors but have devoted myself to studying the science of the game, and analyzing every detail connected with it. I chose the work of a teacher as the best field for study for there all manner of questions arise and have to be met with a perfectly clear, correct and understandable explanation. In the twenty years that I have been teaching Golf, I must have given as many if not more golf lessons than any other teacher that ever lived, and I hope among you, my dear children, there will arise at least one, a wielder of the club able to uphold the name of Dunn.

*Musselborough was the original center of Golf, much older than St. Andrews.

PREFACE

This book is intended as a reminder of the principal points to study in the science of the game. It is greatly condensed, and in order that it may be accurate, technical terms are used. Also the sciences Geometry, Anatomy, Mechanics, Dynamics and Psychology are used to show proof and reason for my theories.

The subject matter of this book is the text by which all instructors teach at the Seymour Dunn Golf School at Lake Placid, N. Y.

G O L F F U N D A M E N T A L S B Y S E Y M O U R D U N N

GOLF FUNDAMENTALS

ORTHODOXY OF STYLE

SEYMOUR DUNN

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A SIMPLE INTRODUCTION TO THE GAME

Golf is not an expensive or difficult game if gone about in the right way. An outfit of four correctly made and properly fitted clubs, brassie, mid-iron, mashie, and putter, with caddy-bag suited to a beginner can be bought for fifteen or twenty dollars, and if a public course or unpretentious club is near at hand, a lot of pleasure and beneficial exercise can be had with little cost.

To excel at the game, one should go about it correctly. The manner of gripping and swinging the clubs is important.

Grip There are many styles of gripping the club, any of which may be good, but grip must be suited to the individual. The accompanying illustrations show — orthodox, natural, and the old St. Andrews grip.

Always grip the club in the fingers, never in the palm of the hands because a keener sense of touch is possible in the fingers. Also *set* the hands correctly, i. e. see the back rather than the face of the wrists. Balanced effort on the part of the hands is the chief thing in producing good direction in the ball's flight.



The overlapping grip
(orthodox)

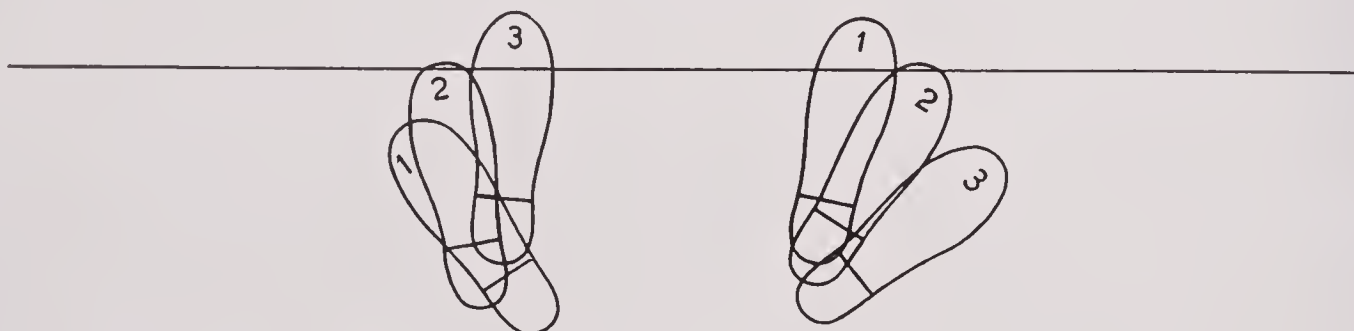
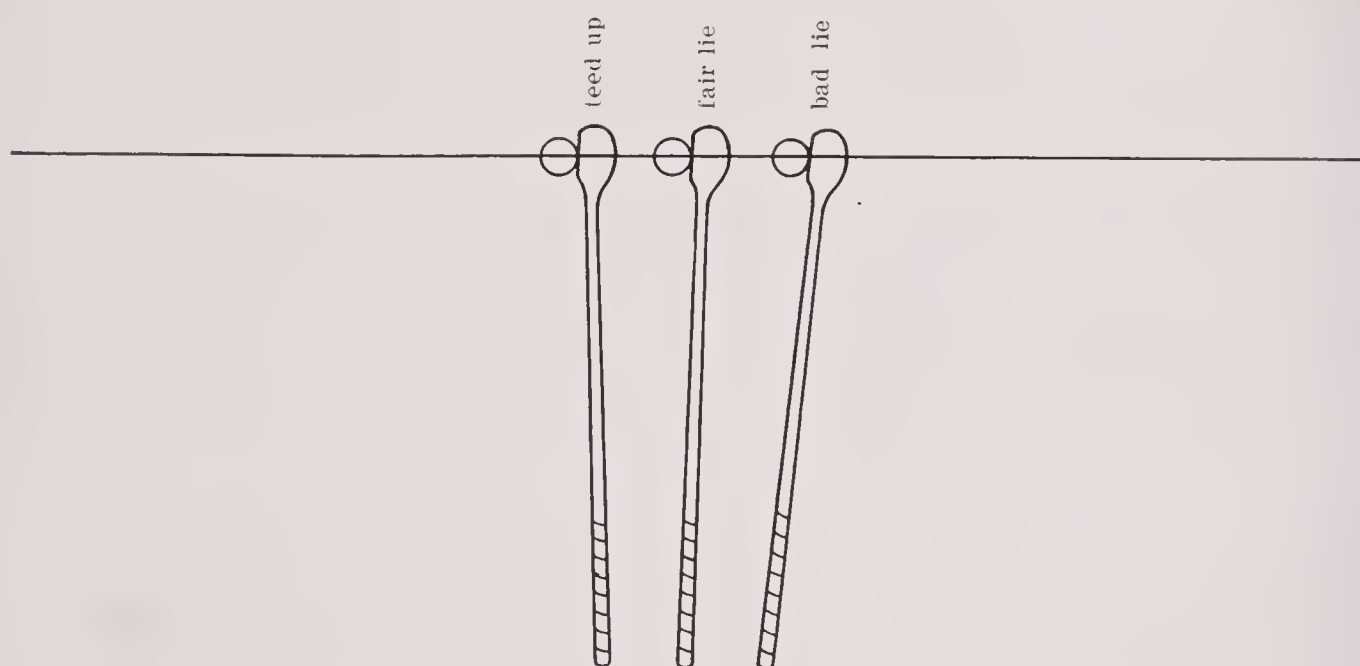


The best grip for weak
hands



The old St. Andrews grip

Stance There are many ways of setting the feet, any of which like the grip, may be good, because in all matters individuality must be considered. Illustrations show the open, square and shut stance. When the ball sits high as when teed up, it is usually played from more nearly opposite the left heel; when lying fair on fairway; opposite the center of the two heels; when lying low as in a cuppy lie or bad lie, from more nearly opposite the right heel. Heels should be about eighteen inches apart with toes more or less turned out and body weight on heels. For the shorter strokes the stance is usually closer and more open.



1—Open stance. 2—Square stance. 3—Shut stance.

Swing There are also many styles of the golf swing: long, short, and medium, also upright, flat, and orthodox. Then again there are swings that are all shoulder action or all arm action or all wrist action. Some swings are a combination of shoulders and arms while others are hips and wrists, any of which may be good, but a combination of hips, shoulders, arms and wrists is more likely to give greatest distance. There are certain fundamental principles of the swing which the good player must observe and these are set forth in the following pages under the title of Golf Fundamentals.

In taking up the game the first thing to do is to learn the swing. The best way to do this is to divide it into three positions (see illustrations of *address*, *top* and *finish* of the swing) and learn to go from one position to the next correctly. See Illustrations, pages 16, 18 and 20.

First Position The position in which you set yourself as you take aim at the ball and prepare for the stroke is called the ADDRESS; you are said to be addressing the ball.

In taking this position you first set the club so that it rests upon the center of the sole, the club face (the striking surface) facing exactly true to desired direction of play.

Without disturbing the set of the club, set the hands in grip determined on and next set the feet in stance determined on.

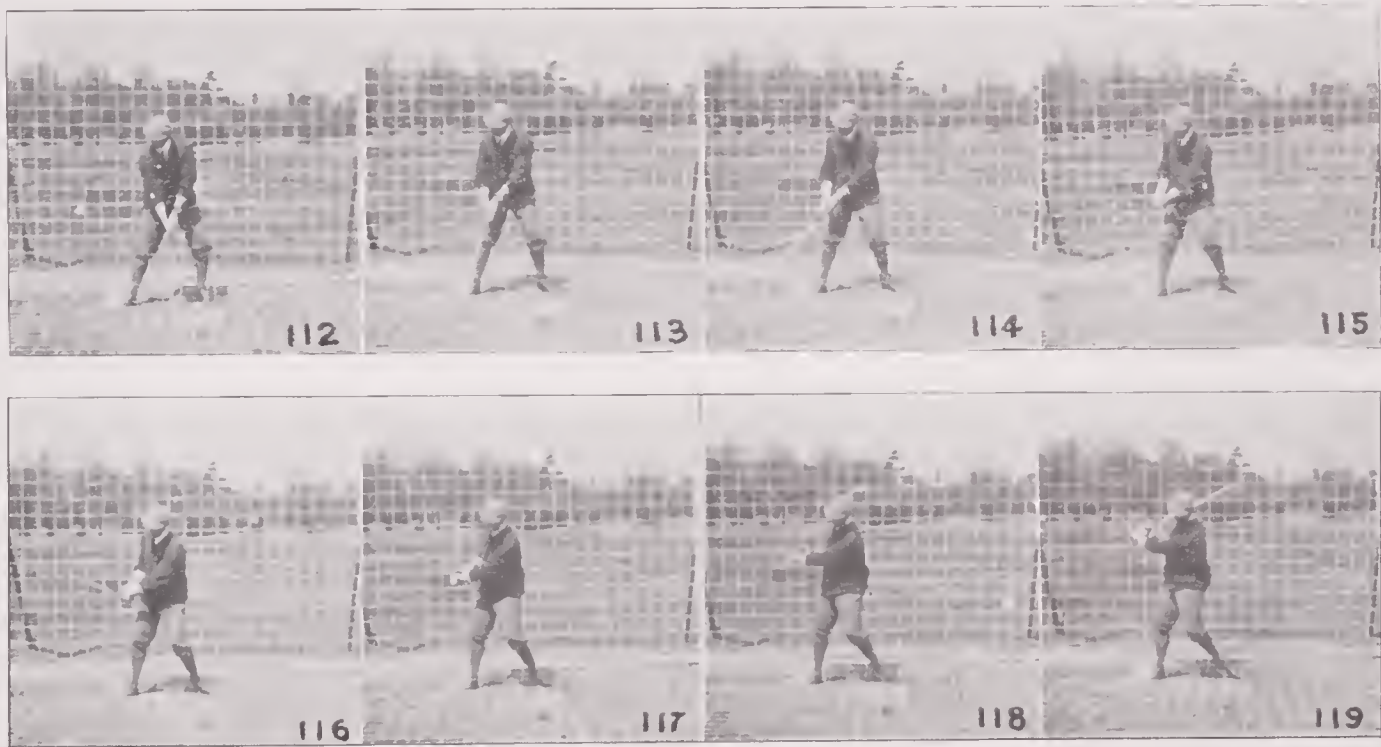
Stand just far enough from the ball so that your weight will be thrown back on your heels with the upper part of the body so set up that you must reach comfortably for the ball. The right shoulder should be lower than the left because the right hand occupies a lower position on the club handle than the left.

Divide body weight equally on the two feet, flex knees slightly, hump back slightly slouchy style and set head properly, i. e. eyes parallel with line of play. You are now ready to make the upswing.



"THE ADDRESS"

Upswing Pivot the body on the right hip, turning shoulders to exact right angles to the right. This movement should sweep the club back along the ground around to your right while from there it is carried upward to a horizontal position over right shoulder by action of wrists and arms to second position. Of course the turning movement of shoulders and upward movement of wrists and arms must be blended, i. e. run the one movement smoothly into the other.



UPSWING IN MOTION PICTURE SERIES

Second Position The top of of the swing. In this position weight should be mainly on the right heel, the hips having shifted sidewise to the right but without moving the player's head from the original position it occupied at the "address". This is accomplished by arching the back thus forming a rough crescent-like outline from back of head to left heel.

The whole entire left side of the body should slump, ankle, knee, hip and shoulder. If the player keeps his feet within his scope of vision over his left shoulder, he will not be so apt to raise his head,

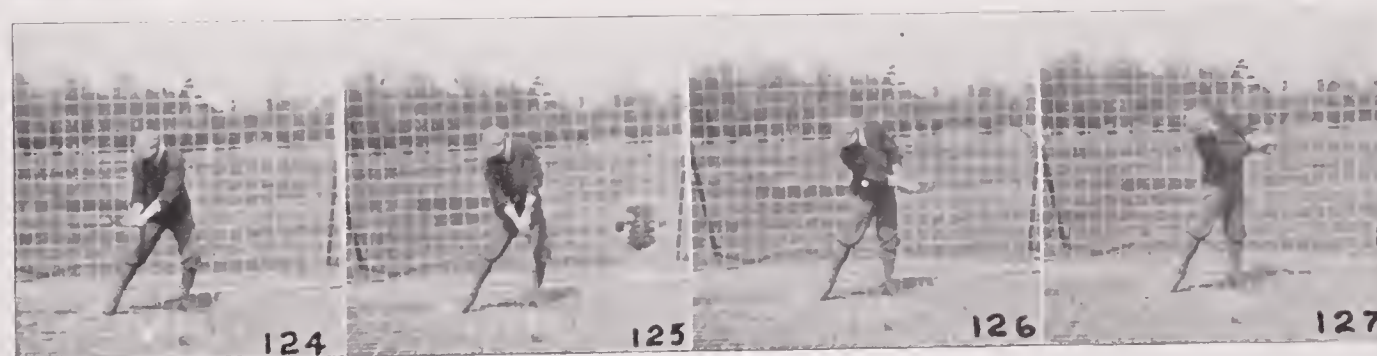
because he cannot at the same time raise his head and see his feet.

The left arm should be nearly straight, the right elbow down, both wrists under the club handle, the club head pointing downward, the eyes parallel with the line of play, both knees still slightly flexed, club shaft horizontal, parallel with the line of play and close to the back of the player's head, the hands no higher than the head.





Downswing The hips should start to re-act first, then the shoulders should begin to unwind while the arms and club sag behind till the arms strike downward to the right, later to sweep round to the ball thus recovering from their sag. While the arms are recovering from their sag the wrists strike downward to the right and at the same time absorb the arm sag in the form of a twist. Thus the club head is still left dragging behind till the very last instant when *snap* goes the wrist twist. Thus the wrists recover from their sagging twist and with the speed of a whip lash round comes the club head crack on the ball and it is off like a bullet.



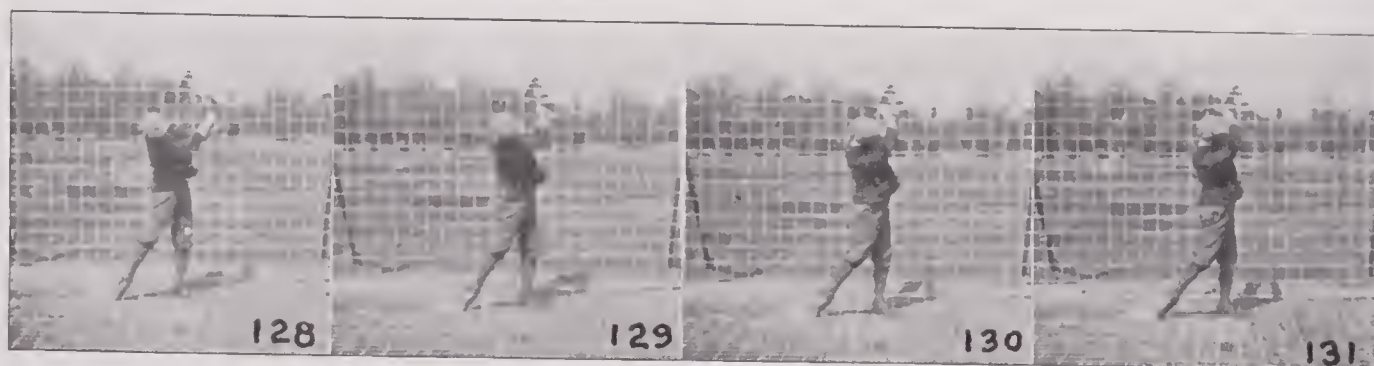
DOWNSWING IN MOTION PICTURE SERIES

Upswing to the Finish From the point of impact the club head takes the lead, body weight is completely shifted to left hip, body muscles now apply the breaks to the swing, club is dragging the shoulders round, right side of player's body slumps, ankle, knee, hip and shoulder thus allowing player's head to stay on the same level,



back arches and forms a rough crescent-like outline down the back from head to right heel, shoulders turn to a right angle to the left, club goes up to a horizontal position over the left shoulder, parallel with the line of play and close to back of player's head, hands to a position level with the head, club head points downward, knees slightly flexed, hands well out, wrists well under the club handle, elbows well in and the swing is finished, every motion having been blended into one rhythmic swing.

Work on these matters and build up a correct foundation of the swing which you will vary in length to suit the different length of strokes required. The shorter swings are mere modification of the full swing.



UPSWING TO THE FINISH IN MOTION PICTURE SERIES

EXPLANATION OF THE GAME ✓

THE royal and ancient game of Golf affords most healthful exercise to both young and old. Less violent than tennis, it yet offers an outlet for all the energy of the most vigorous and may be played without overstrain by the very delicate.

Though none are too old to learn, the age of six or seven is the best time to begin. While often appearing even foolish to those who have never played, it is in reality full of keenest interest. To hit the little ball is far from being as simple as it looks, and the game is not merely to hit it, but also to control its flight and play it, in the face of many difficulties, into a small hole with the fewest number of strokes. This requires an accuracy that in an expert is truly marvelous.

Technically the game is to play a ball from a definite starting point, striking it with an implement called a club, into a distant small hole, $4\frac{1}{4}$ inches in diameter; the object being to put the ball into the hole with the fewest possible strokes.

In a full course there are 18 starting points and a like number of holes. Every starting point with corresponding hole, ground between, and everything directly pertaining to it is known by the same number.

The various features of a hole are:

- 1 The starting point, called the "tee" or "teeing ground".

2 The terminal point or hole, a cylindric socket $4\frac{1}{4}$ inches in diameter.

3 The "hazards" of which there may be several at one hole, and none at another, tho usually found in some form at every hole. A "hazard" is any path, road, tree, bush, fence, ditch, sand hole, brook, pond, etc. Where nature does not furnish enough, artificial ones are made, generally earth banks with a trough on one or both sides. A little sand is usually put into the trough to make the playing more difficult. Such hazards are called "bunkers". There is frequently a bunker at the side of the direct line to the hole to punish badly directed strokes; on some courses there are hazards waiting to catch almost every poorly played stroke.

4 The "putting green" is all ground except hazards, within 20 yards of the hole, kept in specially good condition, as the short strokes to be played close to the hole require such a delicate touch that any irregularity or course grass would render good play impossible.

5 All the smooth turf between "tee" and "putting green" is the "fairway". These five principal features from any tee to corresponding hole are together spoken of as a "hole"; e. g. the first hole means teeing ground, hazards, fairway, putting green, and the hole itself.

There is no hard and fast rule governing the length of all holes, in fact, a chief object in planning golf courses is to have no two holes alike either in length or character. They are laid out according to the natural undulation of the land, and such things as ditches, ponds, sand holes, roads, etc., are all considered and utilized as hazards.

The line to the holes and location of the tees are arranged so that these hazards will not be in the way of a properly played stroke, yet so that they will draw out a player's best. Unless his direction of play and judgment are good, his ball will probably lodge in a hazard,—the just reward for poor play. Properly placed hazards tax the skill of advanced players, but spare beginners.

The game is played by two sides, each playing its own ball, a "side" consisting of either one or of two players. If one player plays against another the match is called "a single." If two play against two, each side playing one ball, the match is called "a foursome". If one plays against two playing one ball between them, the match is called "a threesome".

When three players play against each other, each playing his own ball, the match is called "a three-ball match".

When one player plays his ball against the best ball of two or more players, the match is called "a *best-ball match".

When two players play their better ball against the better ball of two other players, the match is called "a best-ball, four-ball match".

Holes are played in rotation, starting at number one. Who shall start first is decided by lot. To start first is to have what is termed the "honor". After playing your ball by swinging strokes from tee to hole, in succession with your opponent, you lift your ball out of the hole and go to the next tee and so on round the entire eighteen

* Best-ball means the lowest score.

holes. This is termed a round and constitutes a game or match, occupying about 2½ to 3 hours, a morning or afternoon of healthful exercise with a golfer's appetite for lunch or dinner as a result. A hole is won by the player or side who puts the ball into the hole with fewest strokes. The winner of a match is the player or side who wins the most holes.

Such are the salient points of the game. To play it skillfully many different kinds of strokes must be mastered. These strokes are played with various clubs, each for a particular kind of stroke. .

The manner of swinging the club is of the greatest importance. It may seem very simple to the uninitiated to strike the ball and send it flying, and it is to an expert, but before anyone can reach that standard every detail of the action of swinging a golf club must be studied. Learn the fundamental principles and then by careful practice learn to adapt them to your individuality. There is a proper way of handling and wielding a golf club which is known as the "Golf Swing".

There are several variations of the *Golf Swing* and they may be divided into three classes:

- 1 The long swing with the longer clubs for propelling the ball the greatest possible distance, called the full-swing.

- 2 The shorter swings of which there are several, used with the shorter clubs when within range of the hole, called the approach-shot swings.

- 3 The shortest swing of all used when the ball lies but a few feet from the hole, called the putting-swing.

These various swings should be dealt with separately, but first the swing in general and its fundamental underlying principles must be understood, as these same principles are the foundation on which all swings are based.

The differences of the several swings are mere variations of these fundamentals, which underlie (perhaps unconsciously) every golfer's swing and cannot be violated in the slightest degree with impunity.

Tho these principles themselves are invariable, their application may vary widely. This is a point to be emphasized very strongly because many do not understand it. There are no two beings precisely the same either in physique, strength or mentality; therefore, no one should even try to imitate in every detail the style of any other player. You may work on similar lines, but to attempt to imitate any other golfer in every detail would be hopeless and absurd. A short fat man cannot play the same style as a tall slim man, any more than he can expect to wear the same clothes.

Develop your game in your own style but work on the fundamental principles on which all good golfing swings are based.

Read all books written on golf, and take all the lessons you can, as a broad knowledge of the game is of the utmost importance. Tho there are many books written by men who never studied or knew anything of the true principles of the golfing swing, and many more instructors in similar plight, still it will do you good to read books, and take lessons. But when taking lessons from unscientific instructors use your own judgment as

to wherein they are right, forgetting immediately everything that does not appeal to you as sound and logical.

When reading or taking lessons, never for a moment forget the principles on which all correct golfing swings are based, whether your instructor or author understands them or not. Often a golfer of ardent enthusiasm pursues every detail of some famous golfer's style quite regardless of whether it suits him, and consequently never plays any better. Were he instead to study carefully the fundamentals of the golf swing and the details of the styles of our best players, experimenting only with such of their methods as appeal to him as being natural, and then work out the rest under guidance of a capable instructor, he would make rapid progress. Some who have played constantly for 10 or 15 years with no improvement because of trying to adopt some other man's style, begin to improve just as soon as the fundamental principles of the swing and the methods suited to them are made clear. So begin right by studying the principles first, and then place yourself under guidance of the most competent teacher you can find, so that progress will be rapid, sure and lasting. You will get pleasure out of the game which those who have begun wrong know nothing of, since the game to them means little more than hitting at a ball, instead of accurately directing and controlling the ball's flight.

Another common mistake of beginners is to buy at once a set of golf clubs, which generally find a place on the wall as ornaments or are thrown into some dark corner. As there are no two persons alike, either in

physique or strength, and as there are no two golf clubs exactly the same, either in weight, length of shaft, springiness, or angle of set, every player must choose those which will suit him exactly even to the smallest detail. If you are a beginner do not buy a set of golf clubs at once, but borrow or hire one for a while till you know what suits; then either select clubs from a good stock, or still better, get your instructor to do it for you. A good and conscientious instructor will be just as much concerned in the selection of your clubs as you would be yourself, since his work of making a player out of you will be much easier for him if you have fitting clubs with which to play.

The best way to fit clubs is to have your measurements properly taken and clubs made specially for you according to specifications. Read my article, "*Science of Clubs*", see contents and study my club chart.

For measurement blanks, write Seymour Dunn, Lake Placid, New York.

PEGS ON WHICH TO HANG YOUR GOLF THOUGHTS

NOT all of us are blessed with a superabundance of natural ability for the royal and ancient game, but what we lack in this respect we can largely make up for by scientific study and practice. Briefly, the secret of success is: be consistently accurate in play rather than occasionally brilliant; be methodical and systematic, both in your choice of implements and in your manner of using them; have a theory by which to work in solitary practice; and by practice of proper theory, become naturally correct; then when you go to play a match game, leave theory in your locker and play naturally.

Know the science of the Golf Swing and the essential features that constitute:

- 1 Full-swing stroke
- 2 Three-quarter-swing stroke
- 3 Half-swing stroke
- 4 Quarter-swing stroke
- 5 Heavy-lie-chip stroke
- 6 Good-lie-chip stroke
- 7 Cupped-lie-jab stroke
- 8 Abnormally-high-trajectory-under-cut stroke
- 9 Curve-to-right-cross-cut stroke
- 10 Curve-to-left-cross-cut stroke
- 11 Push-shot stroke

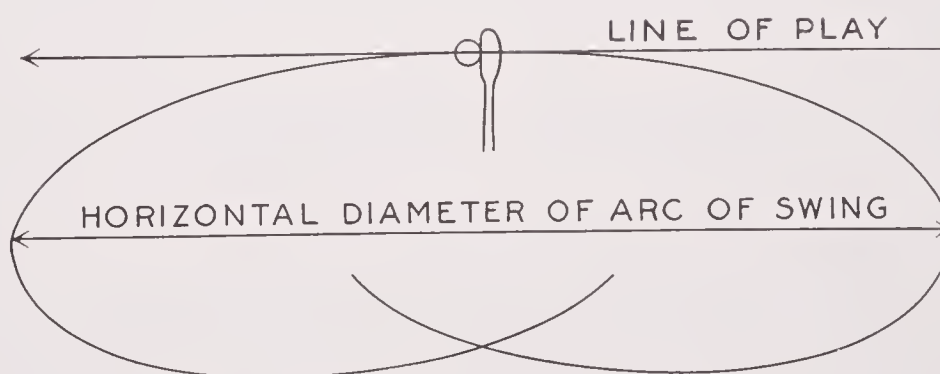
- 12 Dead-stop stroke
- 13 Short-jump-out-explosion stroke
- 14 Long-jump-out-explosion stroke
- 15 Bank shot
- 16 Cross-wind stroke, wind from right
- 17 Cross-wind stroke, wind from left
- 18 Hillside stroke, up grade
- 19 Hillside stroke, down grade
- 20 Hillside stroke, ball above feet level
- 21 Hillside stroke, ball below feet level
- 22 Angle shot
- 23 Long-putt stroke
- 24 Short-putt stroke
- 25 Stymie pitching stroke



2



3



4 The arc described by the club head during the swing as seen from overhead

PRELIMINARY ANALYSIS OF THE GOLF SWING

What is our working theory of the golf swing to be?

If we study the swing of any good player practising, we find the ball is struck unerringly, and with such regularity that we get the impression the whole thing is automatic. It is automatic and has a mechanical foundation; so far so good. Next, what are the mechanics? Let us analyze the swing by aid of geometry. We observe that the golf club head describes an arc in the up-swing and redraws the same arc in the down-swing returning to its starting point. Take an ordinary drawing compass such as draftsmen use and with it draw an arc; redraw this same arc: what are the essentials in the compass necessary to the redrawing of the same arc? There are two. The pivotal point of the compass must be placed in exactly the same place it occupied at the first drawing and kept there for if this point slips or moves out of place you are lost. Essential 1 is *a steady center properly placed*.

The radius of the compass must be the same if that arc is to be redrawn precisely the same; therefore, we must set our compass at the proper radius and keep it at that same radius thruout. For if the radius is contracted or extended it must necessarily spoil the arc. Essential 2 is *maintain a proper radius*. See illustration 2, page 31.

On close observation we notice the golf club head does not describe a true circle but an ellipse; nevertheless

it is a true ellipse which shows that the radius is governed. This complication will be dealt with later.

We will now observe the fact that the arc of the club head's swing is neither a horizontal nor a vertical arc but all on a slope; it is oblique, and this obliquity is all in a *plane*. See Illustration 3, page 31.

Here then, we have another essential, as it is obvious of course that the oblique plane of the swing must line up with the ball in order to hit it. Essential 3 is: *swing the club in a plane of obliquity that lines up with the ball*.

A geometrician will now see that if the foregoing three essentials are observed in the golf swing the center of the club face must strike the center of the ball and if it fails to do so then one or more of those essentials must have been violated in which case it is up to the student to find out which and by aid of the instructor to correct it.

The striking surface of a golf club (called the face) may seem to the beginner a very small area with which to strike the ball. As a matter of fact it is really a very liberal area since the shot will be no good unless the ball is struck with a certain central point no larger than a pin point, to strike with other than the exact center of gravity would cause the ball to curve off its course.

In order to send the ball in a given direction there are two other essentials which must be observed: The horizontal diameter of the arc of the swing must be in parallel with the direction of play. See Illustration 4, page 31. Essential 4 is—*swing club in parallel with line of play*.

The club face must face square to the desired direction of play at the moment of impact. Essential 5 is—*strike with square impact*.

So much for the geometry of the golf swing. We will now briefly analyze the physical movements involved. We find the golf swing is one united effort, the result of four properly blended movements (a) shoulder movement, (b) hip movement, (c) arm movement, (d) wrist movement.

For preliminary analyzing purposes the swing should be divided into two principal combined movements: (1) The lateral movement created by (a) the round about movement of the shoulders and (b) the side-wise action of the hips.

(2) The vertical movement created by the upward and downward action of (c) the arms and (d) the wrists. From geometric analysis we find that the arc of the golf club head was an oblique ellipse, and we know from geometry that this is to be had by blending lateral and vertical curves. The combined movements of the hips and shoulders cause the club head to describe a lateral curve, like the curve described by a scythe in the hands of a man mowing.

The combined movements of the arms and wrists cause the club head to describe a vertical curve like the curve described by a sledge hammer in the hands of a blacksmith striking downward upon an anvil. In the golf stroke we find the scythe and sledge hammer strokes blended into one stroke. The student should prove this point immediately by taking a golf club in hand and addressing a ball. See Illustration 5. Imagine you are going to strike the ball not in regular order of the golf stroke but that the ball is to be flattened out on the



5



6



7



8

ground like a pancake, just as the blacksmith flattens out iron on the anvil. Raise the club to the right shoulder exactly as a blacksmith would lift a sledge hammer straight up in front of him over his right shoulder and pause in your position at the top of this act. See Illustration 6, page 35. The club head has described a vertical curve and your arms and wrists have done exactly what they do in the golf swing. Hold this position keeping club and arms in the same position relative to the shoulders and now turn the shoulders to the right turning arms and club with the shoulders and you find yourself at the top position of the golf swing. See Illustration 7, page 35.

Next unwind the shoulders returning to position shown in Illustration 6 and now bring the club down to the first position assumed, illustration 5. Now again raise the club like a blacksmith but this time over the left shoulder and when you have completed this vertical movement turn the shoulders to the left and you find yourself at the finish of the golf swing. See Illustration 8, page 35.

It is the proper blending of these two principal movements the round about; and the up and down that make the golf swing.

You now have the whole sum and substance of the golf swing. We have of course done the swing in the order of putting the cart before the horse. This was done for the purpose of analysis. Our next step is to properly hitch the horse to the cart. Since the golf swing is a thing which requires great exactness, we must go very deeply into the matter in order to understand it completely.

SUMMARY OF PRELIMINARY ANALYSIS

By closely observing the following mechanical principles you are certain to improve, and by analyzing your strokes according to these mechanical principles, you can find a clear and logical explanation for any and all your troubles.

To dispatch the ball correctly in a given direction we must have the three following essentials:

- 1 Strike with the center of the club face.
- 2 Club head must be travelling in the direction of play during the impact.
- 3 Club face must be at right angles to the direction of play.

To insure these ends we should build up our swing on the following mechanical principles, and we should regard these mechanical principles as the mechanical laws of our swing.

Mechanical Principles

Failure to accomplish
Essential 1 is due to
violation of one or more
of these three

- 1 Maintain a steady swing center.
- 2 Maintain a proper swing radius.
- 3 Swing club in a proper plane of obliquity.

- 4 Swing club parallel to intended direction of play.

- 5 Club face must be controlled so that it is square to the intended direction of play at the moment of impact.

These principles are all set forth in this series of lessons and each lesson should be mastered before proceeding to the next. By mastered, I mean not merely understood but practiced till physical application has become second nature—unconscious habit.

MECHANICAL LAWS OF THE GOLF SWING

Meaning only those things which have to do with
the order of our movements

FUNDAMENTAL 1

A Steady Swing Center

A steady center is essential to a steady swing.

Center of shoulders is center of swing.

Proper body action will keep center steady.

If player's head is steady, swing center will be steady.

FUNDAMENTAL 1 Warning—the best of inten-
Keep Your Head Steady tions sometimes fail; therefore, do
not be too sure of what you do. You
may feel sure your head did not
move, while it actually moved several inches.

This applies alike to all the following:

If the player's head is to be kept steady, the player's body must turn on a pivot. Since the human body has two pivotal points, i. e., the hip joints, and since it is impossible to pivot on two points at the same time, we must choose between them, as experience has taught us that it is no use attempting to pivot upon an imaginary pivotal center between the two.

A close study of our greatest golfers reveals the fact that when they turn their bodies to the right they pivot



9 FIRST OR ADDRESS POSITION



10 SECOND OR TOP OF SWING POSITION
Note position of right hip, projecting outward



11 THIRD OR FINISH OF SWING POSITION
Player's head has and should move forward with follow thru movement



12 HOW NOT TO SWING A GOLF CLUB
Wrong hip action throws player's head out of place. Note position of right hip—drawn in. Compare with Illustration 10



13 Note position of right hip at top of swing; projecting outward. An aphorism worth remembering; when you swing to the RIGHT, project your RIGHT hip out to the RIGHT



14 Note position of left hip at finish of swing; projecting outward. Another important aphorism: When you swing to the LEFT project your LEFT hip out to the LEFT

upon the right hip, and when they turn to the left they pivot upon the left hip. They shift from one hip to the other, yet they do this without moving their heads, by shifting the middle part of their body weight only.

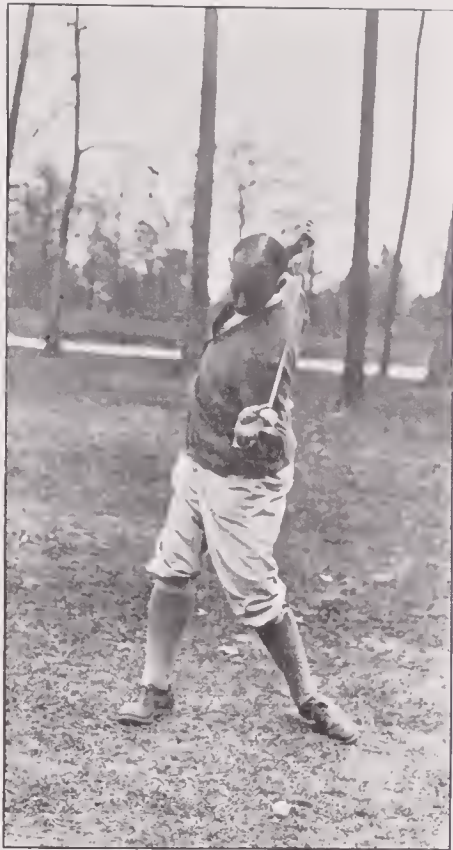
To shift the pivotal center, we must shift our center of gravity. To pivot on the right hip we must shift the greater part of our body weight to the right foot, and shift it to the left foot to pivot on the left hip. All this body weight shifting movement is done with sidewise hip action.

At the address position of the golf swing, the player's weight is equally divided between the two feet. Then as the upswing starts and the player's body has to turn, the player's right hip is projected out to the right slightly so that the right hip may become the center of gravity and thereby the pivotal center. Reaction sets in on the downswing and the player's left hip is shot out as the swing progresses to the finish.

This hip action is of the greatest importance for reasons other than its being the chief secret of the knack of keeping the player's head steady. As the illustrations show, it is the most powerful position into which you could get your body, but I will deal more fully with this point under "Dynamic laws of the golf swing". I desire to emphasize here that if the hips go out in proper turn, the player's head will not sway. Study Illustration 14, page 41, and try to imagine a player projecting left hip and head to the left at the same time. It is impossible. You would lose your balance completely. You cannot project both hip and head in the same direction at the



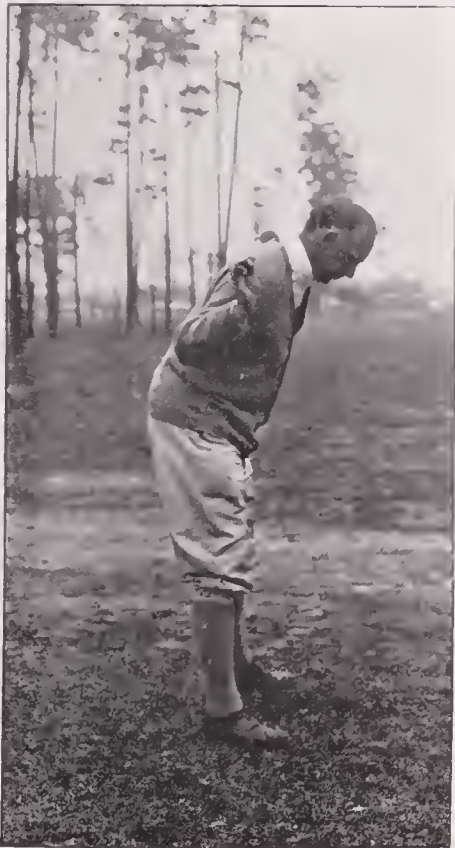
15



16



17



18



19



20

same time. When you project your left hip to the left at the finish of the swing you naturally lean to the right to preserve your equilibrium. So too, with the right hip, at the top of the swing you will lean to the left, thereby keeping your head steady and gaining the maximum of power.

The next important action which has a very great bearing on the steadiness of the player's head is the shoulder action. The shoulders should work in a plane perpendicular to their axis which is the upper section of the spinal column. See Illustrations 15-16-17-18-19-20, page 43.

If we did not stoop over when we played golf but stood erect, our shoulders would rotate in a perfectly horizontal course. But we do. We stoop over; the upper section of our spinal column which is the axis about which the shoulders rotate is somewhat oblique and therefore the shoulders work in an oblique course about their oblique axis.

The shoulders do not work in the same plane of obliquity as the club, but in an oblique plane of their own. The one must, however, work in perfect harmony with the other, as the slightest error on the part of the shoulders will upset the oblique plane of the club head's course.

The precise angle of obliquity in which the shoulders should work is fixed by the player's style of play, i. e., the amount of stoop assumed at the address.



21



22



23

A forcing exercise which quickly trains all muscles to rotate the body without moving the head.
Be sure to shift your weight well from heel to heel, and form a
crescent like outline down the back

OTHER POINTS TO OBSERVE TO AVOID MOVING THE HEAD

- 1 Keep weight on heels to avoid rising on toes.
- 2 Knees should be slightly flexed and degree of flexure not changed during swing.
- 3 Amount and direction of spinal bend should remain unchanged thruout swing.
- 4 At *Top* and *Finish* of swing your feet should be within your range of vision, first over the point of the left shoulder at *Top* of swing, and at *Finish* over the right. See Illustrations 13 and 14, page 41. Were I to glance downward in the direction of my feet I would be able to see them without changing my waist bend or body position.
- 5 Form a rough crescent-like outline down the back from back of head to left heel at *Top* of swing. To right heel at *Finish* of swing. See Illustrations 10 and 11, page 40.

FUNDAMENTAL 2

*Maintain a Proper Swing Radius**Left Arm is Master Arm*

To maintain swing radius, keep left arm *stiff* at elbow joint. Note that I do not say straight but *stiff*. Just how straight or bent the arm might be is a mere matter of individual style. My point is not to change its bend. Fundamental 2 is *maintenance* of swing radius.

The triceps muscle keeps left arm straight. Train it to do so, become conscious of this muscle tensing. A good way to become conscious of its presence is to go to the *Top* of the swing, stiffen the left arm as straight as possible, ask your instructor to try to bend your arm while you resist, then with your right hand feel for the two principal heads of this muscle. The larger head will be found well under the arm close to the armpit, the other lies across the outside of the upper arm like a finger. See Illustrations 28 and 29, page 50.

Illustrations 24, 25, 26 and 27, page 49, show the rigidity of the left arm at various stages of three different swings.

Of course the swing is not a true circle; it is elliptic, due to the wrist action. The wrist action, however, is not likely to spoil your radius work, while the bending of the left arm is certain to. It is also certain to cause great loss of power, since the left arm should act as a lever. A lever that breaks in the middle is no lever at all.

The golf stroke is the result of a combination of lever-ages—it is compound leverage. The club is one lever actuated from the left wrist. The left arm is another lever actuated from the shoulder joint. The left shoulder is another lever actuated from the spinal column. The right shoulder, right arm, and right hand operate or drive thru the club, left arm, and left shoulder levers.

Another argument in favor of keeping the left arm stiff at the elbow is that it permits a more extensive wrist action. Bend the elbow at the top of the swing and the wrist must fail to bend by just so much. Wrist action is worth more than elbow action because it is speedier.



24 Address for quarter swing
Note: Rigidity of left arm



25 Top of three-quarter swing
Note: Rigidity of left arm



26 Top of quarter swing
Note: Rigidity of left arm



27 Driving; half way down
Note: Rigidity of left arm



28 Triceps muscle of the left arm



29 Pupil locating the triceps muscle

FUNDAMENTAL 3

Swing Club in a Proper Oblique Plane

The golf swing is all on a slope, i. e., it is Oblique.
Right arm controls obliquity.

Club head travels in an obliquely elliptic course about the player's head.

Obliquity is determined by distance of ball from player, and the style of the player's swing, i. e., flat, orthodox or upright.

Club should travel not merely in an oblique course but in an oblique *plane* which must pass thru the center of the ball. To be orthodox, hands and club head should be in the same plane with the swing center and the ball.

The oblique plane of the swing varies greatly in the matter of style. A short player of powerful physique using longish clubs would stand further from the ball than a tall player of slender physique using shortish clubs. The degree of obliquity would be more upright for the tall player, and flat for the shorter player, and in every case if club heads, hands, swing center and ball be all in the same plane, the swing is orthodox on this point whatever the degree of obliquity may be.

The degree of obliquity varies not only with different players, but with each individual. With the shorter clubs such as the mashie, we make a more upright swing because we stand nearer the ball; swing center is more nearly over the ball, and therefore the plane from ball to swing center is more upright, and the club head, and hands should work in this same plane.

Illustrations 32 and 33 show what is known as the flat swing: club head, hands and ball are all in the same plane tho not in a plane with the shoulder center. This kind of swing is all right; it will produce good results, because it is mechanically correct, merely slightly unorthodox in style. Restricted vertical arm action is the cause of a flat swing. Study Illustration 30. The upward arm action has elevated hands and club heads more than the flat swing shown in Illustration 32. Had there been a little more upward action of the right arm in the swing shown in Illustration 32, the swing would not have been flat.

I emphasize the right arm because while the left arm must necessarily also rise with the right, the right arm is the controlling arm so far as the oblique plane of the swing is concerned.

FUNDAMENTAL 3 Too upright a swing is frequently the cause of overswinging, i. e. swinging the club back over the shoulder beyond horizontal. When overswinging is due to this, the cure is obvious—restrict the upward action of the right arm. Overswinging is never caused by excessive backward bending of the wrists, but only by bending the left elbow or raising the hands too high. You cannot bend the wrists back too far. Illustrations 34 and 35, page 55 show a flat swing which is worthless, being both unorthodox and mechanically incorrect. The club would not connect with the ball at all. These illustrations are given to show the common cause of topping the ball



30 Near TOP of mechanically correct swing; club head, hands, center of shoulders, and ball all in line. Orthodox style



31 Near FINISH of mechanical correct swing; club head, hands, center of shoulders, and ball all in line. Orthodox style



32 Near TOP of flat swing. Mechanically correct, but unorthodox style; swing too flat



33 Near FINISH of flat swing. Mechanically correct, but unorthodox style; swing too flat

When swing is made as in illustrations 32 and 33 results should be good, because: while unorthodox in style, mechanical essentials are correct; club head and hands are in a plane with the ball

with the heel of the club, which would be the result if this fault were not carried to the extremity shown. The club always follows in the plane of the arm action, indicated by the line of the shaft. Place a straight edge along the line of the shaft on Illustration 34, 35, 38, 39, 40, and 41, and it will be found that club head and hands are not in the same plane with the ball, and therefore the swing is mechanically incorrect and it would be unreasonable to expect satisfactory results. In illustrating these faults I have exaggerated them so that the student will readily see the point. Err ever so slightly in these directions and the resulting ball's flight will be unsatisfactory.

Players sometimes fall heir to a persistent malady, and for lack of understanding cannot cure it. "*Socketting*" the ball with iron clubs is frequently due to too flat a swing.



34 Near top of flat swing, which is both unorthodox and mechanically incorrect



35 Near finish of flat swing, which is both unorthodox style, and mechanically incorrect

When swing is faulty as in illustrations 34 and 35, result: if any, will be a topped ball off the heel of the club
Cure: make swing more upright



36 Near top of upright swing. Mechanically correct, but unorthodox style; swing too upright



37 Near finish of upright swing. Mechanically correct, but unorthodox, swing too upright

When swing is made as in illustrations 36 and 37, results should be good because, while unorthodox in style, mechanical essentials are correct; club head and hands are in a plane with the ball

Illustrations 36 and 37, page 55 show the upright swing which tho unorthodox is mechanically correct—center of club head, hands, and ball are all in the same plane. Note elevated position of hands relative to height of swing center, and compare with the flat swing shown in Illustrations 32 and 33, page 53.

Unorthodoxy of swing in the matter of uprightness or flatness comes from too much or not enough vertical arm action.



38 Near top of upright swing, which is both unorthodox style and mechanically incorrect



39 Near finish of upright swing, which is both unorthodox style and mechanically incorrect

When swing is faulty as in illustrations 38 and 39, results: if any, will be off nose of club, and there will be "Sclaffing", i. e. pounding the ground with the sole of the club



40 Near top of upright swing, which is both unorthodox and mechanically incorrect



41 Near finish of upright swing, which is both unorthodox and mechanically incorrect

Illustrations 40 and 41 show club head in line with ball and shoulder center but hands are not. Violations of plane of obliquity shown in illustrations 38, 39, 40 and 41 cause "Sclaffing", and ball if struck will be struck with nose of club

FUNDAMENTAL 4

Swing in parallel with line of play

The club should swing in parallel with the line of play.

Properly blended lateral motion controls the parallel of the swing.

Lateral motion is created chiefly by the shoulder rotary action.

We may therefore regard the shoulder rotary action as the predominating factor in the control of the parallelism of the swing.

Side action of the arms and twisting of the wrists will also create a lateral motion, but the chief work of the arms and wrists is to create vertical motion. The shoulder rotary motion converts the arm and wrist vertical motion into a parallel swing. The shoulder rotary motion creates a round about scythe-like sweeping motion, while the arms and wrists create an up-and-down hammering-like motion. It is the *proper blending* or co-ordination of the combined arm and wrist upward-and-downward movements with the shoulder-round-about movement that makes a parallel swing. To be orthodox in the full swing shoulders should turn exactly 90° each way. This leaves the arms and wrists free to make a purely upward and downward hammering motion. Thus you gain the maximum of power from all. The extent of the lateral motion each way must always be equal, to make the swing parallel. By varying the extent of the vertical motion we vary the length of our different strokes.

It is the proper *extent* of lateral rotation (each way right and left) done at the proper *time* and at the proper *speed* in relation to the up and down motion that makes proper blending.

Illustrations 42, 43, 44, and 45, gives a good idea of what is meant by making the swing parallel with the line of play. These pictures were taken from overhead.

FUNDAMENTAL 4 SHOULDERS MUST

- A Turn to a Proper
EXTENT each way
 - B Turn at a Proper
TIME
 - C Turn at a Proper
SPEED
- to guide club along the
line of play

Illustrations 46, 47, 48 and 49, page 63, show what is meant by a swing being out of parallel. This is a very common fault which causes a chronic *curved* flight to the right, or a misdirected flight *straight* out to the left of intended direction, depending on how the hands work. Frequently a player might make a swing in which during the upswing and at the *top* of the swing all has been in perfect parallel, but

on the way down the shoulders might race ahead too much and swerve the club out of the proper parallel. This brings the club into contact with the ball before the wrists have fully recovered from their sag and this combination causes a slice. The ball starts out to the left of the direct line and swerves round to the right. If the club head is not sagging behind at the point of impact, the result will be a misdirected ball starting out to the left and continuing straight on out to the left; but generally the club head will be behind because the racing ahead of the shoulders disorganizes the timing of the swing.



42 TOP OF SWING

Correct parallel



43 PART WAY DOWN

Correct parallel



44 PART WAY UP TO FINISH

Correct parallel



45 FINISH OF SWING

Correct parallel

PARALLELISM OF SWING

Pictures taken from overhead thru the oblique plane of the swing

Illustrations 50, 51, 52 and 53, page 65, show a swing out of parallel the other way. This causes either a mis-directed flight *straight* out to the right of intended line of play or a curved flight to the left, known as a hook. The hook is the most likely result. The wrists in this case are apt to get the club head thru too soon for since the shoulders have turned too far to the right they are behind in their action and thus disorganize the timing of the swing.



46 TOP OF SWING

Incorrect; out of parallel



47 PART WAY DOWN

Incorrect; out of parallel



48 PART WAY UP TO FINISH

Incorrect; out of parallel



49 FINISH OF SWING

Incorrect; out of parallel

Incorrect Swing: Out of parallel, generally destroys the timing of the wrist snap and makes their action sluggish. This combination of errors results in a form of swing commonly known as dragging across the ball, causing a slice in which the ball starts out to left of direct line of play and curves around to right. Shoulders did not turn enough to the right at top of swing, and too much to the left at finish.

Pictures taken from overhead



50 TOP OF SWING

Incorrect; out of parallel



51 PART WAY DOWN

Incorrect; out of parallel



52 PART WAY UP TO FINISH

Incorrect; cut of parallel



53 FINISH OF SWING

Incorrect; out of parallel

Incorrect Swing: Out of parallel, generally destroys timing of wrist snap and makes their action too vigorous to balance the shoulder effort. This combination of errors results in a form of swing commonly known as shoving across the ball, causes a hook; ball starts out to right of direct line of play and curves around to left. Shoulders turned too far to the right at top of swing, not far enough at finish

FUNDAMENTAL 5

Strike with square impact

During impact, club face should be at right angles to the desired direction of the ball's flight.

Hand mastery over club controls this.

Prevent both "supination", and pronation" of club face. Correct *set* of the hands controls this.

"Pronation" means to turn the club face Prone, i. e., face downward.

"Supination" means just the opposite, i. e., face upward.

<p>FUNDAMENTAL 5</p> <p>Hands Should Control the Angle of the Club Face.</p>	<p>Correct <i>set</i> of the hands varies with the individual. Different individuals have different peculiarities of forearm development. A tendency to "slice" or "hook", might be corrected by a certain <i>set</i> of the hands.</p>
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"Slice" is only that part of the ball's flight in which the ball *curves* to the right. A ball driven *straight* out to the right is not sliced, but merely a misdirected flight. "Hook" is only that part of the ball's flight in which the ball *curves* to the left. A ball driven *straight* out to the left is merely a misdirected flight.

Illustration 54, page 67 shows the orthodox "*Setting*" of the two hands.

The "*Set*" of the hands means the extent to which they are set over or under the club handle. It will be seen in this illustration that the two angles formed by

the thumb and fore part of the hand are like inverted V's with the point pointing straight upward to the player's head. Illustration 55 shows the two V's pointing to the player's right shoulder. Illustration 56 shows the two V's pointing to the player's left shoulder.

Some players, especially beginners, are very prone to allow the hands and consequently the club face to twist at the instant of impact, as shown in Illustration 55. There are two causes for this: 1 Insufficient effort on the part of the hands to control the angle at which the club should face during the impact. The resulting flight is a slice, with excessively high trajectory in which the ball starts immediately out to the right of intended direction of play. When the club faces as shown in illustration 55, it is said to have "supinated", and causes this particular class of slice.

2 Incorrect *set* of the hands will also cause the club face to supinate at the moment of impact. The cure is obvious—the hands must either make greater effort to control the facing of the club at the point of impact, or be *set* with the V's pointing more nearly towards the right shoulder at the outset when taking the grip of the club, with club facing square to the desired direction of play. This might be the only proper setting of the hands for the particular individual concerned, and because this is perhaps the natural way for the hands to act when the muscles of the forearms are placed under the intense tension of the stroke. There are muscles in the forearms known as the "*Supinators*"; which turn the hands palm upward, and the "*Pronators*" which turn the



54 Square impact. Orthodox set of the hands



55 Supination impact. Causes excessively high trajectory, misdirection to right and slice.



56 Pronation impact. Causes smothered flight; ball starts out to left curving to left and ducks downward.



57 Collapse of left wrist. Causes immediate misdirection to right, low trajectory and slice.

hands palm downward. These muscles control the angle at which the club faces.

Some people are very peculiarly developed in these muscles having one of them considerably stronger than the others, due perhaps to some peculiar occupation. Naturally the stronger muscle exercises a greater influence over the hands than the weaker, and therefore twists the hands and consequently the club face in its particular direction of action. The pronators of the right arm would naturally pronate the club face, i. e., turn it prone or face downwards. This is why no hard and fast rule can be laid down as the correct *set* of the hands that will hold good for all players. Some players are *very* prone to pronate excessively with the Pronator Radii teres muscle of their right forearm at the instant of impact, which imparts a smothered, hooked flight to the ball. The ball starts out to the left and curves yet further to the left, and suddenly ducks downward, running a good distance along the ground.

There are two cures for this fault but first must be determined the real cause. The causes might be: 1 Right hand is overruling the left hand, *because the left hand is allowing it to*. The cure is—grip firmer with the left hand and looser with the right. 2 One or both hands may be *set* wrongly, the two V's being set so that they point too much towards the right shoulder, and during the stroke the hands refuse to remain so set, they twist over to the left and thereby twist the club head also. See Illustration 56, page 67.

Some players are very strongly inclined to *set* their hands with V's pointing towards the right shoulder, in

spite of the fact that it is not the correct setting for them. The only proper cure for this, since the hands are inclined to twist over, is to *set* them in a position already twisted over at the outset when gripping the club, as shown in illustration 56, but of course with the club face square to the line of play. Uncomfortable as this might be, it is a certain cure for “smothering” the ball—certain because you eliminate the cause. Never combat one error with another, but *eliminate* the error. Suffer the discomfort till it no longer is uncomfortable. By perseverance and determination you will soon find comfort in the new habit. Console yourself with the thought that the club face must be absolutely square to the desired direction of play at and thruout the duration of impact if the ball’s flight is to be true, and therefore, there is no alternative.

Balanced effort on the part of the pronators and supinators of both arms is the thing to be sought, and each individual must experiment and find out exactly what particular setting of the hands produces this balanced effect. All the supinating and pronating muscles are involved in the control of the club face.

It is very important that the palm of the right hand be firmly pressed against the thumb of the left hand, then the one hand will be braced and steadied by the other. *Lock the pronators against each other in the hand setting found to be correct.*

Another cause of failure to get a square impact is shown in Illustration 57, page 67. The left hand should act as a fulcrum against which the right hand strikes. Should this fulcrum collapse or give way, the club head

will drag behind, and the club face will consequently not be square to the line of play, nor will it be perpendicular to the initial line of trajectory.

A common failing among players is the inability to get the club head thru; it drags behind the hands. Collapse of the left wrist is the cause. The left wrist gives way or collapses because of a lack of back pressure from the left hand against the club handle, due to its feeble effort in this direction, or due to its inability to hold its own under the strain of excessive shoulder rotary effort imposed upon it.

The cures are obvious: first determine the true cause of the trouble. Is the left hand loafing or are the shoulders overstraining? Either increase the effort of the left hand or moderate the effort of the shoulders; perhaps both are a little at fault.

Just how the left hand functions as a fulcrum is explained more fully in *Transmission of power*, see contents.

The resulting flight from this fault is—ball departs immediately out to the right of intended direction, flying very low with curve to the right.

SUMMARY OF THE MECHANICS OF THE GOLF SWING

To strike always with the center of the club face, observe Fundamentals 1, 2, and 3.

To strike always with club face travelling in right direction, observe Fundamental 4.

To strike always with club face at right angles to line of play, observe Fundamental 5.

These five Mechanical Laws give a working theory that is complete in so far as the order of your movements is concerned, as they cover every possible error of the swing that would cause inaccuracy of impact and thereby faulty direction. Therefore no matter what the inaccuracy might be, a perfectly clear, sound and logical reason can be found and a remedy applied. Of course there are an endless number of minor causes that upset each of these Fundamentals, but the first thing to determine always is *which* Fundamental was violated. It is then a comparatively easy matter to trace out the minor cause. The object of all this theory is to give you a simple and definite way of reasoning out the cause of any and all your golf swing troubles.

These Fundamentals are the foundation of every stroke in the game no matter what the style of the player may be and they cannot be violated in the slightest degree with impunity.

SIMPLE SUMMARY OF SWING CONTROL

To put the essence of all the foregoing on Mechanics into simple language, the five *Fundamentals* are:

- 1 HEAD Keep it steady, to keep the whole swing steady.
- 2 LEFT ARM Keep it stiff to preserve the swing radius.
- 3 RIGHT ARM With it raise the club to a proper height to guide it thru a proper slope.
- 4 SHOULDERS Turn them the proper *amount* each way, and at the proper *time*, and at the proper *speed* to guide the club along the line of play.
- 5 HANDS Work with them to the utmost of their strength at the moment of impact, to control the club face so that it will be square to desired direction of play.

If you are not hitting your ball true and sending it straight, one or more of the above five Fundamentals has gone wrong. Find out which and correct it. To find out which study "Faults Resulting from Mechanical Errors of Swing".

FAULTS RESULTING FROM MECHANICAL ERRORS OF SWING

THE common faults are: topping, skying, slicing, and hooking. These take various forms and are the result of violating the mechanical laws of the golf swing.

TOPPING

Topping is caused chiefly by the raising of the player's head, but it is quite common to top by contracting the radius of the swing, or by flattening the oblique plane of the swing. Contraction of the radius is sure to result in a top off the toe of the club, while too flat a swing will result in a top off the heel. Simply raising the player's head results in a top midway between toe and heel. When topping is the fault, determine first whether it is a top off the toe, heel, or center. By this you will know what is the cause of the topping. When the cause is known it is a simple matter to apply a remedy.

Of course it is quite possible to cause a top off the heel by rising on the toes and losing the balance forward. However, this is going into combinations of errors, which will be dealt with later.

SKYING

The antithesis of what is said concerning topping the ball applies to skying the ball. Extension of the radius of the swing extends the club head so that it goes under

the ball and this skying will be accompanied with slice, since extension of radius extends the club head outward as well as downward. Therefore the ball will be struck *inside* the center of the club face. Too upright a swing will cause the club head to go under the ball, thereby skying it, and this skying will be accompanied with hook, since to change the obliquity of the swing in this manner brings the club head in nearer to the player, and therefore the ball will be struck with the toe end of the club face.

Simply dropping the player's head, drops the center of the club head under the ball, and the ball will be skyed without slice or hook.

The same errors that cause skying cause "*Sclaffing*".

SLICING

Slices may be divided into four different classes; each the result of a different cause.

Class 1 Slice. Definition—The ball travels two-thirds of its journey quite straight on the intended line of play and only at end of its flight does it curve off to the right. This is caused by striking the ball somewhat inside the center of the club face. To determine the cause of this fault first determine whether the height of the ball's trajectory is medium, high or low.

If class 1 slice is accompanied with medium height of flight, then Fundamental 1 is being violated, swing center is being moved slightly forward by the player not retaining a perfect balance and the ball is being struck somewhat inside the center of the club face.

If class 1 slice is accompanied with excessively high flight; Fundamental 2 is probably being violated—radius of the swing is being slightly extended, ball is being struck inside center of club face, also club head is getting too much under the ball. This slice was explained under skying—the skyed slice.

If class 1 slice is accompanied with low flight, the probable cause of the trouble is violation of Fundamental 3, obliquity of swing has gone wrong. A slightly flat swing of incorrect flatness will cause impact with the lower heel corner of the club face. This always causes a low flying slice curving off at the end of the flight.

Slight violation of Fundamental 1, 2, or 3 in the manner described will cause slicing, and if carried far enough will cause socketing, or even a complete missing of the ball.

Class 2 Slice. Definition—ball starts out to the left of the direct line of play and immediately begins to swerve to the right. This is because the club face strikes the ball a glancing blow, dragging across the line of play from outside line of play to inside. The cause is that the swing is out of parallel. Fundamental 4 is being violated. See Illustrations 46, 47, 48, and 49, page 63. Also the wrists are snapping too late.

Class 3 Slice. Definition—ball starts immediately to the right, flying excessively high. Supination of the club face is the trouble. Fundamental 5 is being violated. See Illustration 55, page 67.

Class 4 Slice. Definition—ball starts immediately to the right flying low. Left wrist as a Fulcrum is giving

way, another form of violation of Fundamental 5. See Illustration 57, page 67.

It is quite possible to have a combination of several slicing causes at work.

HOOKING

The opposite of what is said of slicing applies to hooking. There are four distinct classes of hooks, the class 1, having sub-classifications the same as the slice.

Class 1 hook. Definition—the ball travels two-thirds of its journey quite straight on the intended line of play and only at the end of its flight does it curve off to the left. This is caused by striking the ball somewhat outside the center of the club face. To determine the cause of this fault, first determine whether the ball's trajectory is high, medium or low. If low then the probable error is violation of Fundamental 2—radius is being slightly contracted.

If class 1 hook is accompanied with high flight, the probable cause of the trouble is violation of Fundamental 3, obliquity of swing has gone wrong. A slightly upright swing of incorrect uprightness will cause impact with the upper toe corner of the club face. This always causes a high flying hook curving off at the end of the flight.

Class 1 hook with normal trajectory is due to violation of Fundamental 1, swing center is being moved slightly backward by the player not retaining a perfect balance. The minor matter, i. e., the cause of loss of balance is a thing which can be determined only by close observation. It might be caused by the player's standing

too far away from the ball with the body weight upon the balls of the feet and settling back upon the heels during the swing. The cure in a case of this kind would be to stand nearer the ball, with the body weight on the heels. This is the proper place to have it for every stroke.

Class 2 hook Definition—ball starts out to the right of the direct line of play and immediately begins to swerve to the left. This is because the club face strikes the ball a glancing blow, cutting across the line of play from inside the line of play to outside. The trouble is that the swing is out of parallel. Fundamental 4 is being violated. See Illustrations 50, 51, 52, and 53, page 64. Also the wrists are snapping too soon.

Class 3 hook Definition—ball starts immediately to the left and curving yet further to the left suddenly ducks downward and runs a good distance along the ground. Pronation of the club face is the trouble. Fundamental 5 is being violated, right hand is overruling the left.

Class 4 hook Definition—ball starts immediately to the left flying high. Left hand as a fulcrum is not giving way but is offering too great a resistance to the right hand and is therefore getting the club head thru too soon.

This is another form of violation of Fundamental 5. The effort of the hands is unbalanced.

DIGGING AND SCLAFFING

Digging the ground is caused by the swing center being improperly placed, i. e., too low or by moving down-

ward during the stroke. It is also caused by too upright a swing, and may be caused by insufficient reach in the first place and reach extending during the stroke due to centrifugal force. When the above are accompanied with late wrist action "Sclaff" is the result.

SOCKETING

Socketing is caused by losing body balance, falling in towards the ball, or too flat a swing. Standing too far away from the ball and over-reaching for it is also a common cause.

COMBINATION OF ERRORS

Exaggerated cases of topping, skying, slicing or hooking are due to a combination of errors. For example, it is possible to strike the ball with the heel end of the club face—this would cause a slice. At the same time the swing might be out of parallel, dragging across the ball, which also causes slice. In addition to these two, the left wrist as a fulcrum might give way and because of this, the club head would be behind the handle—this causes slice. Still worse and more of it, there might be insufficient effort of pronation to prevent supination of the club face. This too would cause slice.

A combination of conflicting errors might produce a perfectly straight flight with proper trajectory, but this is always accompanied with more or less loss of distance.

It sometimes happens that a player strikes the ball a tremendous blow sending it quite straight in the

intended direction, and in a proper trajectory, yet it does not travel anything like the distance it ought to. This is due to a combination of errors of opposite nature working against each other and eating up the force of the stroke, the ball getting only what is left after they are thru with each other.

For example, it is quite possible to strike the ball with the toe end of the club face—which should cause a hook at the end of the flight—while at the same time the left wrist as a fulcrum gives way somewhat, so that the hook cannot develop. If the errors are pronounced, the ball will fly with very little life and the player will think he struck a rock.

Should you go to your instructor with a combination of errors, don't expect him to cure you while you wink your eye. He cannot get your conscious mind intently on two thoughts at once. He will have to eliminate one fault at a time, and therefore better results may be slow in coming.

GOLF FUNDAMENTALS

SEYMOUR DUNN

Book 2

DYNAMIC LAWS OF THE GOLF STROKE

Meaning only those things which have
to do with the power of
the stroke

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DYNAMIC LAWS OF THE GOLF STROKE

More Pegs on Which to Hang Your Golf Thoughts

To dispatch the ball the greatest possible distance, we should use every source of power we have. There are four sources of power:

- 1 HIP ACTION
- 2 SHOULDER ACTION
- 3 ARM ACTION
- 4 WRIST ACTION

In each action there is a climax, and it is by co-ordinating these four sources of power into one united effort and concentrating that effort on and transmitting it to the ball, that produces the greatest driving power of which we are capable.

FUNDAMENTAL 6

Parallel Hip Action Momentum producer. Parallel hip action adds momentum to the blow, and backs up the speed generated by the shoulders, arms and wrists. Momentum is necessary to overcome resistance and to get the benefit of the resiliency of the ball, since ball's initial velocity should be greater than the velocity of the club head. The hip action is called "parallel", because, the action is precisely what the word implies.

FUNDAMENTAL 6
Put Your Hips into it,
i. e. Shift Your
Weight from Hip to
Hip by a Purely Side-
wise Action of the
Hips.

The player's body has two distinctly different motions to make, i. e. 1 the rotary shoulder action and 2 the parallel hip action. One is done for one purpose, while the other is done for an entirely different purpose.

The hips do rotate somewhat but their rotary action is done merely in sympathy with the shoulder rotary action. The real work to be done by the hips is to move sidewise from one side to the other, thereby shifting the bulk of the player's weight from one foot to the other. This must be done without moving the player's head. This shifting of the player's weight is the all important essential and source of the power of the *follow thru*.

Every boxing man knows the value of following up his blow with the weight of his body by shifting his body weight forward as he strikes out. No very great motion of the body is necessary. The slightest shifting of the body weight has terrible effect if done at the crucial

moment. The golfer should do the same thing, i. e. *shift* his weight, and this shifting of the body weight must be so timed as to deliver the climax of this power at the instant of impact.

The golfer, however, must not move his head till after the impact, and therefore is free to move only the central portion of his body which centers in the hips. A study of the motion pictures on pages 107 and 109 show that the right hip has a parallel action of 18 inches from the top of the swing to the finish. This parallel hip action is plainly discernible in every long stroke illustrated, and I would emphasize the point that this is the all important essential and source of the power of the *follow thru*.

To shift the weight just exactly the wrong way, i. e. from left foot to right during the stroke instead of right to left is a very common fault. Therefore every player should look into this matter to see if he is really on the right track.

The hip action is called the parallel hip action because it is an action of the hips that is parallel with the line of play, and to differentiate it clearly from all action of a rotary character.

Illustrations 59, 60, and 61, page 86 are for the purpose of showing extent of hip action and weight shifting.



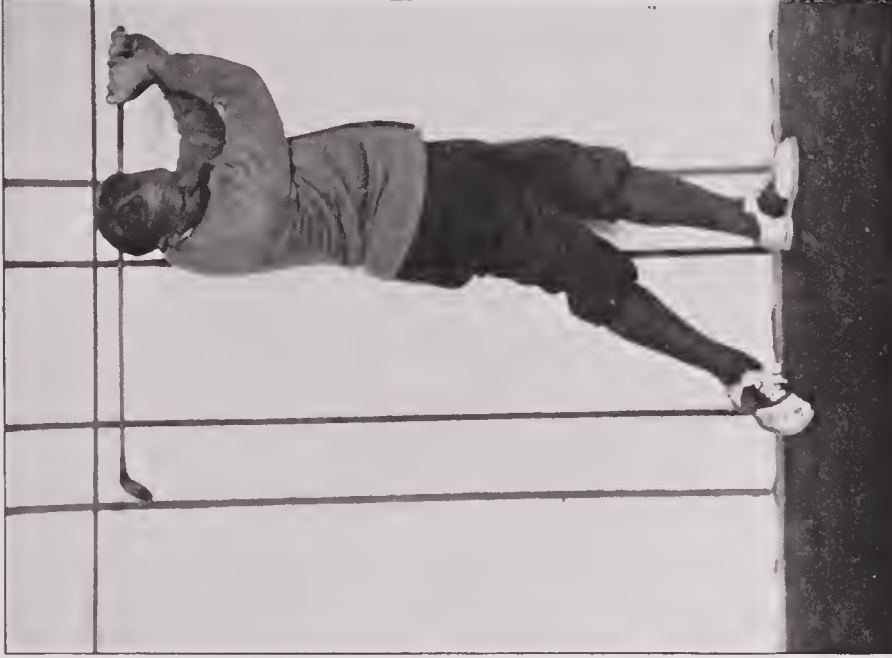
58 PUTTING THE HIPS INTO IT



59



60



61

Showing the extent of the hip action and how the body weight is shifted from heel to heel

FUNDAMENTAL 7

Rotary Shoulder Action — Speed producer. In the full swing stroke rotary shoulder action should create 25% of the swing.

As the wrists swing the club the shoulders swing the arms.

The shoulders by their rotary action maintain and add to the speed generated by the arms and wrists and are capable of generating a tremendous amount of driving power. This shoulder power should be used to the extent of the player's ability to transmit it to the ball. Caution however must be exercised as the shoulders are many times stronger than the wrists, and therefore liable to cause the wrists to collapse.

Illustration 62, page 89, shows
 FUNDAMENTAL 7 clearly the extent to which the
 Put Your Shoulders shoulders enter into the stroke—
 Into It. —the right shoulder has fairly
 punched the ball out. The position
 as a finish is decidedly too long to be orthodox. I hap-
 pened to be defending a reputation for long driving in a
 competition against two of the longest drivers in the
 country and it was a case of neck or nothing. I excuse
 myself only on the grounds that I won the contest. This
 particular drive was 287 yards. The carry was over 250
 and I am satisfied the shoulders played a big part. This
 is not the longest drive I ever made by any means. At
 Wykagyl Country Club, New Rochelle, N. Y., at the old
 10th hole, I once carried the brook 302 yards from the
 tee. I have several times driven onto the first green at

Wykagyl which was 375 yards then (1907). I have also many times driven on to the first green at Lake Placid Club, Long Course, which is 376 yards. Once I drove a ball beyond this green into the Wihnington road, 408 yards from the point where I hit it. That was in the days when I used long clubs with light heads.

I gave them up because I never knew which way the ball would go. Less distance and better direction is worth more.



- 62 784 yards was the total for 3 drives. This was nothing extraordinary but it was good enough to win. All balls had to be kept within certain narrow limits on the fairway, or the total distance of the drive was lost

FUNDAMENTAL 8

Arm Action Speed producer. Arm action should create 25% of the full swing stroke. The left arm unites club with player's body and is therefore the master arm. The right arm merely guides and drives club and left arm thru.

The arm action is chiefly an up and down action like driving a peg into the ground. It should be vigorous but limited in the upward extent for the sake of swing control.

In the upswing the club should be *swept* away from the ball *along the ground* by turning the shoulders. Meanwhile the wrists should be so loose that they saggingly twist, leaving the club head somewhat behind.

When the club head has been dragged about one foot, this wrist sag should end in a reaction of the wrists wherein they twistingly sweep the club head round to the player's right and the wrists into proper position to bend upward, thus raising the club head upward in the manner of raising a hammer to strike a blow, i. e., head leading. When the club has reached a vertical position, See Illustration 117, page 107, the arms commence to raise the club handle, raising the whole club now as if *shoving* or *sliding* the club, head foremost, over the right shoulder. See Illustrations 118, 119, 120 and 121, page 107.

In the downswing this order is reversed: the shoulders start to unwind before the arms begin their

downward stroke, meanwhile the arms and club sag sideways behind. Study illustrations 97, 98, 99 and 100, page 104. These illustrations give a good idea of what is meant by the lateral curve of the golf swing, i. e. the round about motion.

This sag action of the arms wherein the shoulders start to unwind while the arms sag behind results in a reaction which generates greater force than would be the case if there were no sag. The shoulders starting first get ahead of the arms, the arms later have to make a race of it to catch up, but before they make this race to recover from their sidewise sag they strike downward as if the player were going to drive a peg into the ground which is to the player's right.

The arms in their downward action *drag* the club, handle foremost, down from the shoulder, the club head meanwhile dragging away behind. As the arms have about completed their downward stroke, the reaction of their sidewise sag comes into action just after the wrists begin their downward striking action. While the wrists are striking the club head downward, the arms are recovering from their sag. Now the wrists absorb the arm sag by themselves sagging into a twist so that the club head is still dragging behind, see illustration 100, page 104.

Now just as the shoulder rotary action is about to reach its climax opposite the ball and the arms are about to reach the climax of their downward stroke and have almost recovered from their sidewise sag, and the wrists are about to reach the climax of their downward stroke,

the wrists let loose a twist which recovers them from their sag, and now all these actions and reactions come to a climax together in a terrific snap on the ball.

The wrists being quicker in their action than the arms must not expend their effort till the arms have had a chance to get a good start ahead of them. If this is not done the wrist action will be expended at the wrong point in the swing, or its affect squandered and wasted thruout the downward stroke instead of concentrated close to the ball. A good expression is *cut the club down to the right of you but don't start with a jerk*. Slash down with the left and punch thru with the right.

Study carefully the Illustrations 121, 122, 123, 124, and 125 on page 107, and Illustrations 141, 142, 143, 144, and 145, page 109. Note the arms started downward first, wrists coming into action later.

Arm action *drags* the club downward, handle foremost. Wrist action *breaks* the club shaft downwardly away from the player's shoulder.

To delay the time of expending the wrist action, do not let the club shaft break away from the shoulder till the arm action has dragged the handle end of the club well downward. It will be seen that the arm action has pulled the club handle downward nearly 24 inches before the club shaft has broken away from the shoulder to any considerable extent.

Some players are prone to exert *too much* effort with their shoulders. The arms and wrists then get *too far* behind and the swing is thrown out of parallel. Co-ordination of swing becomes completely disorganized and slice results. To them I would say, let the impetus gained by the downward arm and wrist action unwind the shoulders, because even then they will in all probability exert sufficient effort with the shoulders to convert arm-and-wrist-downward-hammering stroke into a swing. Experiment will show that you cannot prevent the shoulders from unwinding. The very impetus of the club's swing will unwind them in spite of your effort to check them. Of course the shoulders should not be actually checked. They must start first and get ahead, and the correct thing to do in the case of too much effort of the shoulders is to modify their effort. This however in most cases would not effect a quick cure. Diseases of the *golf swing* have to be dealt with severely sometimes, and an instructor frequently must ask a pupil to do something he does not ultimately want at all. He will do this to tear his pupil loose from the disease contracted. For example, the best way to teach a pupil to drive a straight ball when troubled with a persistent slice, is to teach the pupil to hook. When the counter-irritants are beginning to take effect, I modify the dose and tell my pupil just what is wanted.



63

Note position of peg in ground, to player's right. This shows direction in which initial effort should be made from the top of the swing



64

Merely to illustrate the idea of—start the club down to the right of you

FUNDAMENTAL 9

Wrist Action Greatest speed producer. Wrist action should create 50% of the full swing, and an even greater proportion of the speed of the stroke. Left wrist should be axis of fulcrum. Therefore, right hand must work about left, and because left wrist is fulcrum of wrist action, grip with left hand must be firmer than with right.

Right hand has a great deal of work to do, but its work is entirely different from that of the left hand. Right hand guides club head, controls club face and delivers the blow. At first thought this might seem like all there is to be done, but there is yet something else and of far greater importance and which has to be done by the left hand—*Unite the Chain of Levers*. At the moment of impact left arm and club are like one solid lever from left shoulder down to club head. Left hand is the connecting link between player and club; it is a part of the lever. The strength of the lever must be greater than the power that operates it.

Right hand does not have to grip hard in order to guide or push the club thru. The left must, because the right hand delivers its blow against the left. I do not mean to underestimate the work of the right hand. On the contrary, the right hand has a very great work to do, but that work is not to grip the club tight. To do so would not only spoil its own work, but it would spoil the looseness and freedom of the wrists and possibly render the left wrist incapable of functioning as a fulcrum and all wrist action would be destroyed.

The wrist action is a peculiar one; it is really a combination of two distinctly different actions, twisting and bending. See Illustrations 65, 66, 67; also Illustrations on page 103. In the downswing the wrists bend in striking downward, also, because of the shoulder turn the wrists get twisted, and have to untwist. They bend downward in delivering their downward hammering blow. Meanwhile they sag into a twist, because at this particular stage of the downswing, the arms are reacting from their sag and this sag now has to be absorbed by the wrists. This combination of *bending* and *twisting* of the wrists when done properly produces a flicking motion, a snap, a rolling twirl of the wrist in which the hands are made to suddenly reverse their position. See Illustrations 82-84, page 103. This double wrist action must be ¹co-ordinated, ²concentrated, and ³expended as close to the ball as possible to get the greatest effect from it. It is a common fault to snap the wrists too late. The best correction of this weakness is to practice snapping them too soon.

¹By co-ordinated, I mean downward bending action run into the twisting action properly.

²By concentrated, I mean expended all at once and not spread thruout the downswing.

³By expended close to the ball, I mean reach its climax at the ball.



65



66



67

An Exercise for Developing the Left Wrist

This also shows the *bending* and *twisting* action of the wrists as it is done in the swing proper

FUNDAMENTAL 9 The bending of the wrists must
Put Your Wrists Into always be done in the same manner
it, i. e. Snap the Ball as one would bend the wrist in
Out with your Wrists. striking a blow with a hammer.
Take a hammer in your hands and
strike downward blows with your
wrists, and you will get the right idea of the wrist action
so far as the *bending* part of the wrist action is concerned.

Now rest the hammer on a table and roll it, twist it
over on its right side, then on its left side, and you will
get the right idea of the *twisting* action of the wrist.
When we strike at a golf ball our wrists bend downward,
twist over, and then after impact bend upward.

In order to make the club travel in proper course of
the swing, and bend our wrist in the manner described,
at each end of the swing, we must twist (or turn) the
wrist over. See Illustrations 65, 66, and 67, page 99.
These illustrations show an exercise that is excellent for
developing a powerful, concentrated wrist action. It
will be observed that the left arm is kept pointing at the
ball thruout the motion.

The object of this exercise is three-fold:

- 1 To develop the maximum of wrist action.
- 2 To concentrate it, i. e. expend it all at one point.
- 3 To concentrate it at the *right* point in the swing,
i. e. right at the ball.

The illustrations show the exercise being done with the left hand only, because, 1 that is exactly where we want the action, *in the left wrist*. The right hand works about the left wrist. 2 The left wrist is the weak link in every golfer. This exercise strengthens it.

THE SAG OF THE WRISTS

In the full swing stroke the rotary shoulder action performs all the lateral action necessary to the swing. Nevertheless the wrists must twist in a sag because of the great difference of speed between the club head and shoulders.

We could not rotate our shoulders at a speed corresponding with the club head's speed, and therefore in the downward stroke the shoulders are allowed to get a big start ahead of the club. Wrists and arms absorb this loose motion and by reaction, speed the club up so that it catches up with the shoulders at the point of impact. See aerial view illustrations of the swing, page 104.

There is a looseness, i. e. a sag action in the wrists which occurs in the form of a twist. There is also a reaction from this sagging twist which occurs in both upswing and downswing, and while only very slight in upswing is most pronounced in downswing due of course to the great difference of speed in upswing as compared to speed of downswing.

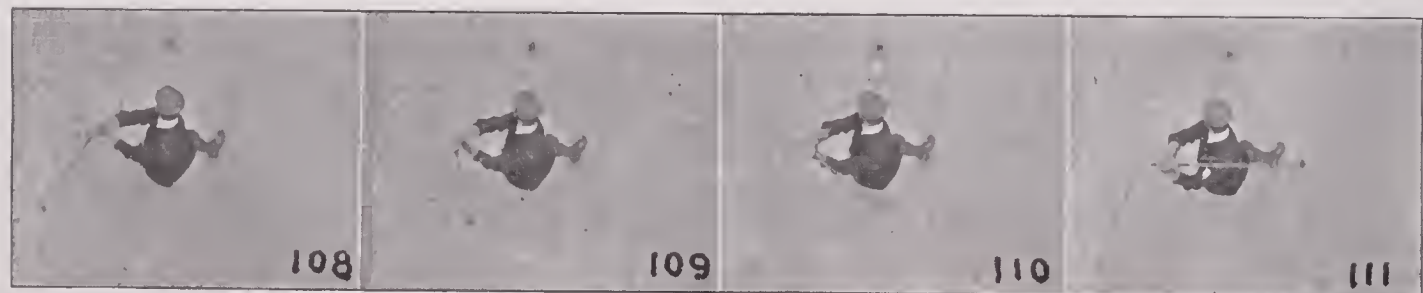
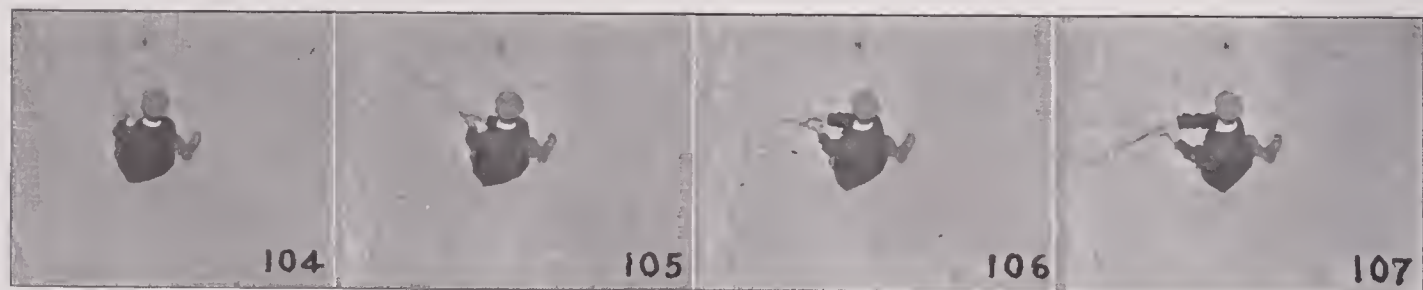
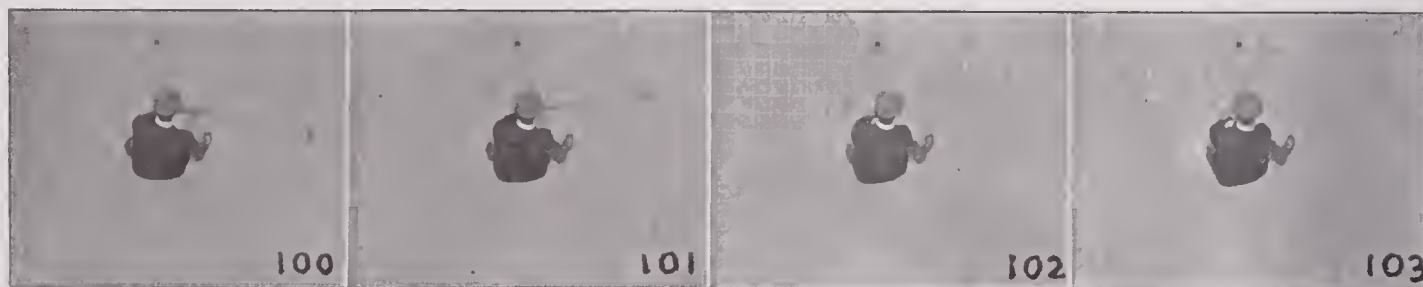
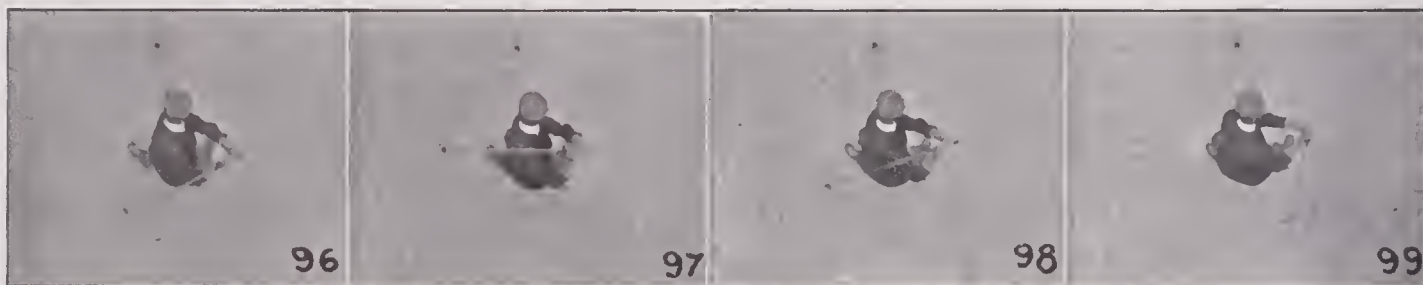
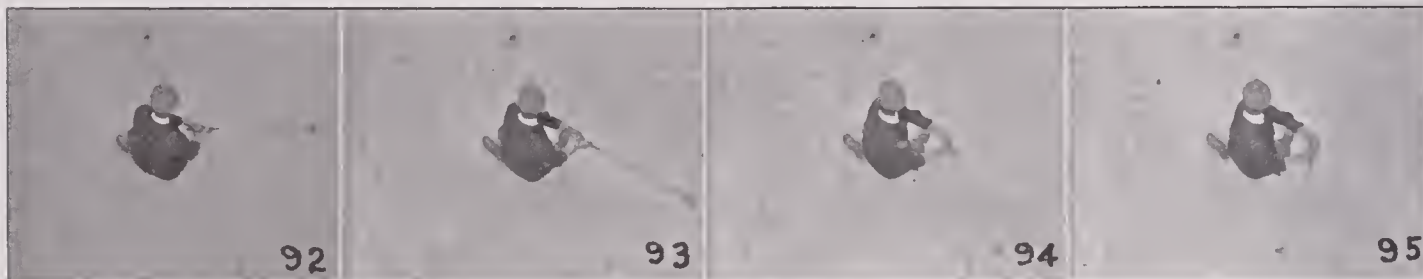
Illustration 68 shows a concave outline down the back of the right hand, while 69, 70 and 71 show a convex outline. This is the wrist sag which can be seen ending in a reaction in Illustrations 72, 73 and 74. Then follows the vertical wrist action shown in 75 and 76 and finally the vertical arm action shown in 77 and 78.

79 shows the start of the downswing. The hips have started forward. Next in 80 the shoulders commence to unwind. In 81 the arms have struck downward leaving the club head dragging behind in a wrist sagging twist. 82 shows the wrist recovering from their sagging twist. 83 shows shoulders, arms, wrists and club head in simultaneous climax and now the brakes are being applied.



THE WRIST ACTION in Motion Picture Series

This was an actual drive in which the ball was driven 250 yards
 Notice also how comparatively placid the body is as compared with the energy of the wrists



OVERHEAD VIEW OF GOLF SWING in Motion Picture Series

FUNDAMENTAL 10

Order of Dynamics of Stroke

Upswing Start the parallel hip action and shoulder rotary action simultaneously and therewith start the club back. This should cause a slight sagging twist in the wrists, in which the club head is left somewhat behind. See illustrations 68, 69, 70, and 71, page 103. When the club has been dragged along the ground about one foot this sag ends in a reaction in which the wrists are excited to greater action than would be the case if there was no sag in the wrists.

When club head has been swept backward along and close to the ground about four feet by the continued turning of the shoulders and the reaction of the wrist sag, start to raise the club by wrist bending action.

When the club shaft has reached the vertical position see illustration 117, page 107, start to raise the handle end of the club by the upward arm action. Continue the body pivoting and upward arm action till the upswing is complete.

Downswing 1 Hips start forward and thereby body weight commences to shift from right foot to left.

2 Shoulders begin to unwind, meanwhile arms and club sag behind.

3 When shoulders have unwound about quarter way arms begin to deliver their downward blow to player's right dragging club handle down.

4 When arms have dragged club down to a vertical position, see illustration 123, wrists cut loose with their

downward bending action cutting club downward to right of player.

5 Meanwhile arms begin to recover their sag from the shoulders, wrists absorb arm sag by themselves sagging into a twist, and thus the club head is still allowed to drag behind.

6 When club has reached the low horizontal position see illustration 124, wrists begin to recover from their twisted sag. Then round comes the club head with the speed of lightning snap-bang on the ball—everything on time. A close study of illustrations 124, 125 and 126, will reveal the fact that while the left hand travels one and one-half feet, the wrists cause the club head to travel 12 feet. The speed of club head is many times greater than speed of the hands, thanks largely to reaction of the wrist sag.

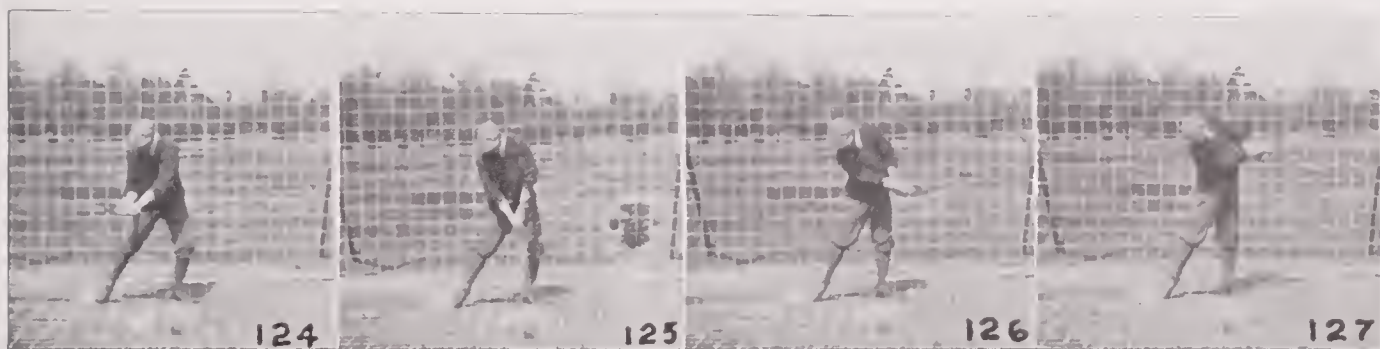
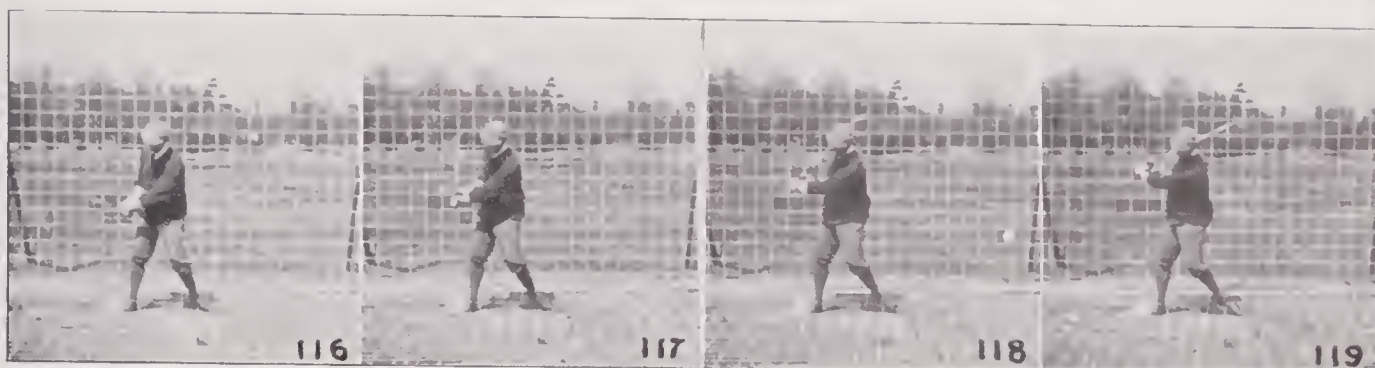
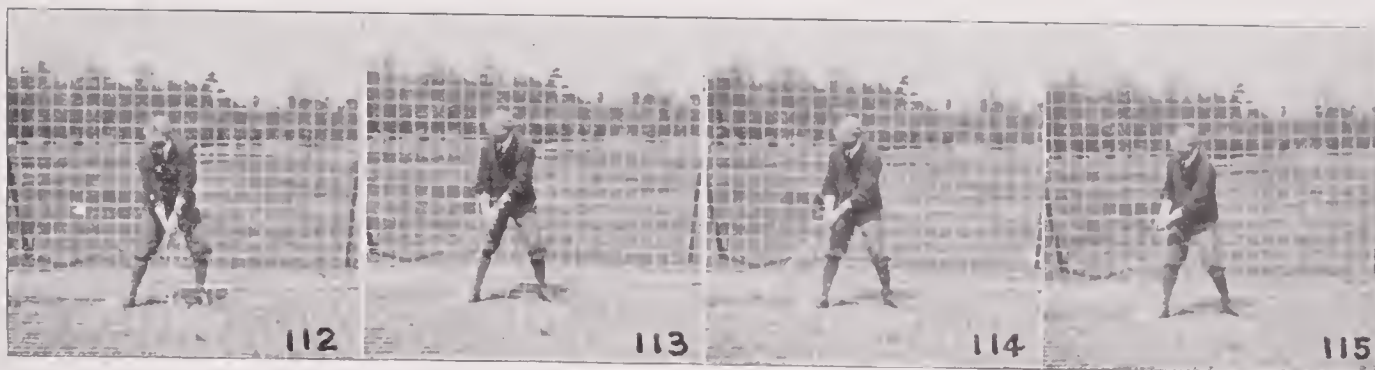
FUNDAMENTAL 10
CO-ORDINATE:

- 1 Hip action
- 2 Shoulder action
- 3 Arm action
- 4 Wrist action
- 5 Arm reaction
- 6 Wrist reaction

From now on wrist *twist* action makes club head take the lead. This is followed by the arms, while the shoulders now rapidly put on the brakes till finally reaction sets in coming from the left leg into the left hip, thence thru the shoulders and arms to the club—and the stroke is finished.

In the upswing and in starting down *don't be in a hurry to hit the ball. Also, don't try to hit the ball till you get to it.*

These two expressions have a world of meaning.

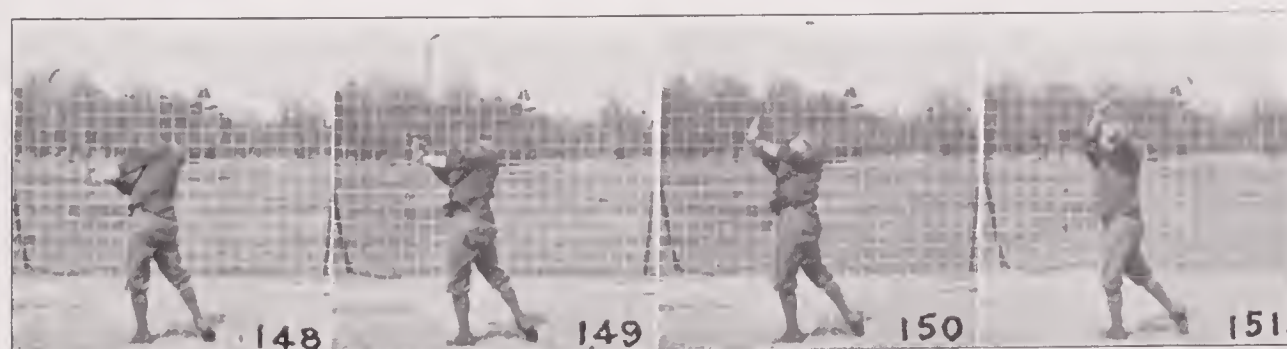
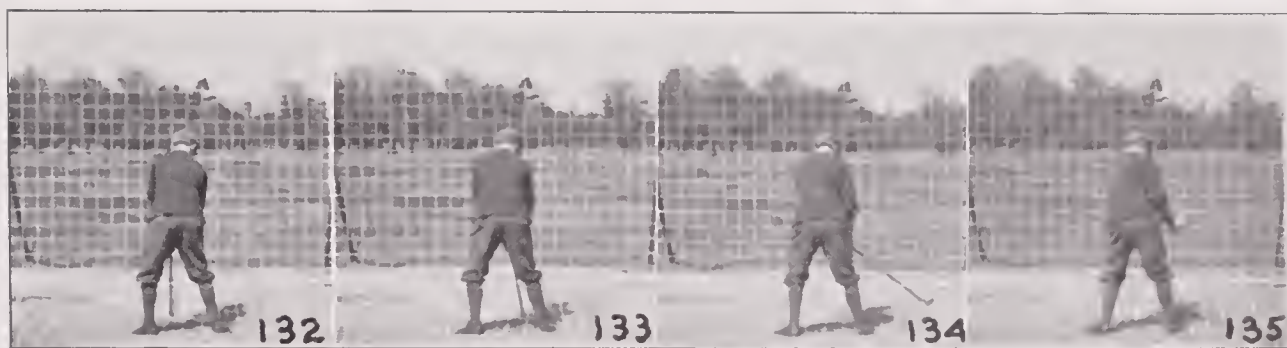


FRONT VIEW, THE FULL SWING STROKE
Action Pictures in Motion Picture Series

In the downswing the reason why one motion should be started ahead of another is because of time required by each before it can reach its climax.

The hips being slower than the shoulders must be started first so that they can get ahead. Likewise the shoulders are slower than the arms and therefore must be allowed a very considerable start ahead of the arms. Finally the arms must be allowed to get almost to the climax of their action before the wrists with their terrific speed are finally let loose. Thus by their different rates of speed each comes to its climax at one and the same moment, i. e. the moment of impact.

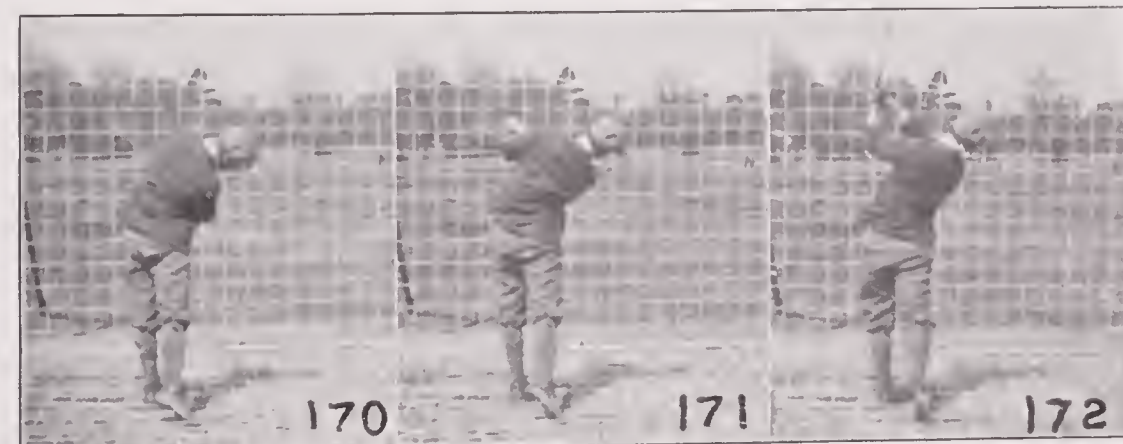
If wrists were allowed to start at top of swing and were expended in a concentrated form, the climax of their effort would be expended before the club reached the ball and therefore lost.



REAR VIEW, THE FULL SWING STROKE
Action Pictures in Motion Picture Series



LEFT SIDE VIEW, THE FULL SWING STROKE
Action Pictures in Motion Picture Series



RIGHT SIDE VIEW, THE FULL SWING STROKE
Action Pictures in Motion Picture Series



173 CONCENTRATION OF POWER

This picture was taken with a high speed camera, yet the speed of the club was so great as to leave a 6-foot blurred image on the plate in so short a duration of exposure

FUNDAMENTAL 11

Concentration of Power

Power is gained from six sources. Six entirely different sets of muscles enter into the stroke for the sole purpose of generating force.

- 1 Muscles of the right thigh and leg drive hips thru.
- 2 Pectoralis minor and serratus magnus muscles drive shoulders thru.
- 3 Latissimus dorsi muscles drag arms down.
- 4 Flexor and adductor muscles of forearms bend wrists downward.
- 5 Pectoralis major and minor muscles pull right arm thru.
- 6 Pronators of right forearm twist wrists thru.

Of course a great many other muscles are involved too, but these are the principle ones.

FUNDAMENTAL 11
Time Your Stroke

Each and every set of muscles must make their effort in such manner that the climax of all are concentrated on the ball. This is "Timing" the stroke.

FUNDAMENTAL 12

Transmission of Power

The speed and power of hips, shoulders, arms and wrists must be transmitted to the club by the hands. Therefore their effort must be equal to all forces combined.

A golfer is like a chain—no stronger than the weakest link. The hands are the weak link of every golfer no matter how strong his hands may be. Therefore the combined effort of all the several sources of power must be kept within the carrying capacity of the player's hands, or they will collapse and the stroke will be ruined.

It is highly desirable that we have all the hand strength it is possible for us to acquire.

Every golfer should have a grip developer (sometimes called a wrist machine), and use it to develop his grip.

The reason why many players "slice" is because they either do not have strong hands or they fail to use their hand strength at the critical moment when the power of the stroke is to be transmitted to the ball. When the hands work as they should, the player can actually feel that he is bending the club shaft on the ball. If you cannot feel this you will not get the distance of which you are capable.

The majority of players who fail in transmission of power, do so because their left hand fails to act as a fulcrum for the right hand to strike against. The left hand has to *bear back* against the right.

To understand this matter, take a club in hand and press the face of it against any solid obstruction. With enough force to bend the shaft. Maintain this pressure and ask yourself, "What am I doing with the upper palm of my left hand?" You will discover that you are very decidedly pressing the club handle backward against the forward pressure of the right hand. Take the left hand away and try to maintain the same bend in the club shaft and you will at once be convinced. This back pressure of the left hand must be done at the moment of impact if you are to overcome the resistance of the ball. If you fail to do it, the club *handle* may go thru, but the club head will come dangling along behind like a dog's tail.

FUNDAMENTAL 12 USE YOUR HANDS, i. e. Prevent Leverage Collapse.	Some players might almost as well stick their hands in their pockets for all the use they make of them.
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FUNDAMENTAL 13

Consistency of Stroke

To be consistently accurate in your results you must be consistently accurate in your stroke. To be consistently accurate in your stroke, your stroke should be a powerful, yet easy and graceful rhythm of precise motion.

Co-ordinate all the Mechanical and Dynamic essentials of the stroke into a beautifully blended rhythm of united movement. This should produce a sense of great power yet without overstrain anywhere.

There is a world of meaning in:

FUNDAMENTAL 13 1 *Never hit the ball as hard as*
Apply Power with Ease, *you feel you could, i. e. with all your*
Grace, and Rhythm. *might.*

2 *Always put a full third of your strength in your pocket and leave it there.* This means the body strength more especially of course and not the hand strength.

3 *Learn to strike with a feeling that you are sacrificing 25 yards of distance for the sake of consistency and good direction.* To let loose all one's strength is to "press". Never press. At the same time never spare. One is as bad as the other. The feeling I have is that I hit hard, very hard, with my hands, but easy with my body.

The shoulders being many times stronger than the hands must not let loose all their strength or they would destroy everything. Work hard with the hands, moderately with the arms, and easily with the body. Do this and you will feel that you are hitting the ball firmly yet with a reserve.

In what I mean you do not actually sacrifice 25 yards of distance—you are to get every inch you can. My point

is that to slash away fiercely at the ball would not add one inch more distance than you could get if you simply *hit* the ball firmly with a good smart snap. If you slash away with all your might you probably will not get as much distance as you would out of a well controlled and snappy hit at the ball.

Use the right club and the right stroke and play both for what they are properly worth. Never try to get 200 yards out of a mashie or spare a brassy shot when you could get there properly with a mid-iron.

An excellent way to acquire co-ordination of movements and consistency of stroke is to whistle, hum, or sing audibly or mentally and *very slowly* a rhythmic dreamy air to yourself and swing back and forth continuously from the top of the swing to the finish. Keep swinging back and forth from one end of the swing to the other and in time with your music. As you swing emphasize the beat of the musical tune with an audible swish of the club. The very thought of a dreamy air suggests relaxation of muscle and co-ordination of movement. At the same time try to accelerate the speed of club's swing so as to produce a loud swishing sound with the club by making it cut thru the air. Of course concentrate the climax of this swish at the point where the ball is supposed to be. Do it all without overstrain yet with sufficient snap to suggest driving power.

Constant practice of this exercise will soon produce a consistently accurate, powerful, easy, graceful and rhythmic stroke, in which there will be both perfect co-ordination and snap.

On any golf course you might find a caddy boy whistling a tune and swishing his club in time with it. Many a professional acquired his easy rhythmic swing whistling and swinging during his caddyhood days.

SIMPLE SUMMARY OF THE POWER OF THE STROKE

To put the essence of all the foregoing on Dynamics into simple language, the eight fundamentals are:

1 To overcome the resistance of the ball and put speed into it, put the weight of your body behind your stroke by shifting your weight.

2 To put speed into your stroke spin your shoulders with all the speed your arms, wrists, and hands are capable of carrying along with their own efforts.

3 That the speed of the shoulders may be intensified, swing the arms with all the speed the wrists and hands are capable of carrying along with their own efforts.

4 That the combined speed of the arms and shoulders may be yet more intensified, swing the club down and snap it thru with all the speed the wrists are capable of producing by their bending and twisting actions.

5 That all these various sources of speed may build up the greatest speed of which they are capable, unite them by bringing them into the swing in their proper order.

6 That the greatest possible speed may be gotten into the ball, concentrate the full force of all these sources of speed upon the ball at the crucial moment in the form of a concentrated *hit*.

7 That all this power may be transmitted to the ball, the left hand must act as a brace for the right hand to bear against. The right hand must deliver the full force of all this combined effort against the left hand in order to lever the ball away.

8 That all this power may be accurately applied with a large measure of constant regularity, there must be a certain amount of reserve in the stroke to act as a balance wheel to maintain perfect co-ordination.

SUMMARY OF THE MECHANICS AND DYNAMICS OF THE GOLF STROKE

To send the ball always the greatest distance of which you are capable and with good direction, you must observe every Fundamental of the golf swing Mechanical and Dynamical.

These thirteen Fundamental laws so far presented give a working theory that is complete as far as order and power of motion are concerned. They cover not only every possible error of the swing that would cause inaccuracy of impact and thereby faulty direction, but also they cover every possible cause of failure to get distance.

If you are not getting the distance you are entitled to, a close study of these Fundamentals will reveal the physical cause.

It is a good thing to memorize all these Fundamentals by a simple expression for each, and for that purpose I give the following:

FUNDAMENTALS

Mechanical

- 1 Head steady
- 2 Left arm stiff
- 3 Right arm control of slope
- 4 Shoulder control of parallel
- 5 Hand control of club face

Dynamic

- 6 Hip action to give momentum
- 7 Shoulder action to give speed
- 8 Arm action to give speed
- 9 Wrist action to give speed
- 10 Proper order of movements to get greatest effect
- 11 Concentration of power to get greatest effect
- 12 Transmission of power to get greatest effect
- 13 Consistency of swing to get the utmost consistency of results.

G O L F F U N D A M E N T A L S B Y S E Y M O U R D U N N

GOLF FUNDAMENTALS

SEYMOUR DUNN

Book 3

GOLF PSYCHOLOGY

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GOLF PSYCHOLOGY

FUNDAMENTAL 14

Psychology of Learning the Swing

After many trials, slow, awkward and painstaking a child learns how to tie a bow. Once learned the whole process can be performed without conscious direction. So it is with the golf swing. By innumerable repetitions, habits will be formed and the swing will become an automatic act, i. e. one that required no focused attention. It "does itself."

Since the golf swing is a thing of many parts all to be controlled at one time, it follows that the student must work on each part separately giving to it his concentrated attention. Finally correct habits will be firmly fixed and the whole performance will become automatic. He can then center his attention on the shot, that is, placing the ball.

During the preliminary waggle just before each shot, the *student* should call to mind the ruling thought on each fundamental. When things are going well such mental effort is not necessary. Never forget that golf is much more a matter of mind than muscle.

Shot, stroke, and swing all have a distinctly different meaning. The shot is the effect, i. e. the resulting flight of the ball.

The stroke is the effort of striking.

The swing is the whole combination of movements in general. Example: you cannot call the upswing the stroke. A player might make a swing and if no ball is present he may leave out of his downswing the effort of striking.

FUNDAMENTAL 15

Psychology of Producing the Shot

By aid of the sciences; geometry, anatomy, mechanics, dynamics and psychology, we are able to evolve a practical working theory of the golf swing based on sound principles and so complete in every detail that it will answer in a perfectly logical way every question or problem which might arise.

Golf however is an art requiring such marvelous dexterity of touch, that to excel, extremely accurate judgment in touch is necessary. Good judgment and proper touch are things which can be developed only by a great deal of practice, and one must practice along proper lines in order to acquire quickly a good sense of judgment in touch.

The physical senses of touch involved are:

1 A keen muscular sense of accuracy in hitting a certain point, i. e. hitting the ball with the club face center.

2 A keen muscular sense of direction, i. e. directing the ball's flight.

3 A keen muscular sense of distance, i. e. proper amount of effort to reach a certain point.

To drive ball after ball straight and far down the middle of the fairway, or to pitch ball after ball a hundred yards or more right up to within a few feet of the hole, or to sink putt after putt as an expert is capable of doing, is a matter of keen judgment in touch.

The novice might well say, "Then why all this mechanical and dynamic theory?" My answer is—to pave the way for development of a proper sense of touch. Without a sound working theory you would get nowhere. Practice by mechanical theory to form the right habits so that your stroke will be automatic and correct, but in playing a shot, the player's attention must be concentrated on *what* is to be done and not *how* it is to be done. The thing to be done is to put the ball into or as near as possible to the hole. The actions involved in doing the thing are to be correct automatic performance, the result of distinct paths in the nervous system, ploughed out by repeated practice of the right kind.

In playing a shot if the mind is allowed to wander to the stroke it cannot be focused on the shot. The stroke is the act which propels the ball, the shot is the resulting effect upon the ball. The conscious mind should be focused on the effect desired, this will excite the subconscious mind to a keen control of the act necessary to produce the desired effect.

Practice of mechanical theory will get you only just so far. To produce continually star performance, the player must learn the trick of inwardly exciting for each shot the inspiration necessary to execute the shot with such skill and precision that it is an art of a very high degree.

A machine may be set to do a certain thing with wonderful precision. It cannot however size up a situation and sense out to a very high degree the extreme delicacy of touch necessary to produce that *exact*



174 MENTAL CONCENTRATION

The Above Unconscious Facial Expression Speaks Volumes

direction, distance and particular spin required to produce the right effect on the ball.

Some players play their strokes in excellent mechanical order but they never score well and rarely win their matches. It is because they lack good judgment in sizing up the touch required to produce the desired effect. They do not know how to excite within themselves a keen sense of the thing to be done in order to produce the effect desired. They lack the inspiration necessary to accomplishments of a very high order. If we focus our thoughts on mechanical theory we dull our inspiration for the shot.

After acquiring the proper physical habits, acquire the habit of always exciting to a very high degree the inspiration to do *exactly* the thing to be done, i. e. put the ball in the hole. Do this on every shot.

In driving from the tee do not drive for the fairway—you might miss it. Instead try to shoot your ball right over the very top of the direction flag which is in the center of the fairway.

<p>FUNDAMENTAL 15</p> <p>Concentrate All Your</p> <p>Attention on the</p> <p>Thing to be Done—</p> <p>PLAY THE SHOT</p>	<p>In approaching do not just play for the green but play for the <i>hole</i> which is in the green. Take aim at it with an intensely keen interest—focus both mind and eye on the hole itself to get a keen impression of where it is, and inspire yourself with the thought that you are going to put the ball <i>right there</i> so that you will focus your attention on the thing to be done, i. e. put it <i>there</i>.</p>
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Practice by mechanical theory but in play concentrate your attention *on the thing to be done*.

FUNDAMENTAL 16

Psychology of Keeping the Eye on the Ball

The eye and the muscles work in unison if you do not consciously interfere and throw one or the other out of focus. Try splitting a stick of wood. If you split correctly, you will find that you need pay no attention to the axe. Fix your eye definitely, without staring, at the spot you wish to hit. The muscles will follow the lead of the eye and you will hit the spot if you do not stare too hard or hit too hard. If you stare hard, you take up so much energy in staring that you may throw the muscles out of gear by interfering with the subconscious automatic muscle processes. Looking at a golf ball ought to be just as easy as your swing. If you hit too hard, you may throw your directing eye out of focus. If you stare too hard, you throw the muscles out of poise. Jerky attention and jerky muscular movement have no place on the golf course. Napoleon was most cool in the pinch of his most critical battles.

FUNDAMENTAL 16 Look at the Ball But Do Not Stare at it.	If you have hitting the ground in your mind, you are likely to hit what you have in mind, for the thought changes the focus of attention. If you want to top the ball, imagine or fear you will top it. If you want to miss it altogether, get your conscious mind, your eye, and your muscles as tense as possible, then fear that you will miss the ball. Both eye and muscles will then loose their focus.
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Use the lightest tack hammer in the following experiment. Hold a small nail between your thumb and forefinger. As you strike, watch your thumb and see what happens. Then see nothing but the head of the nail and note the difference. Next, while you watch the nail, have in your mind the distinct fear of hitting your thumb and note the result.

Of course looking at the ball even attentively is not a guarantee that you will hit it, your acts must be correct. Looking attentively at the ball is merely a help, a help which the star golfers can almost do without. It is a point well known among the star players that tho their eye may be upon the ball at the moment of impact sight is not focused on it, the ball is merely on the fringe of their attention. Their minds attention is always very keenly focused on where the ball is to be sent. A star performer once having looked at the place where the ball is and placed himself in position to strike it, can hit the ball with his eyes shut. Because his swing is automatic and correct he does not need to look attentively at the ball.

FUNDAMENTAL 17

Aim Properly not only at the Ball, But Also at the Place Where You Desire to Send It.

Analysis of Proper Aim Taking

- 1 The shot is produced by body muscles.
- 2 The body muscles receive their instruction and initiative from the mind.
- 3 The mind gets its inspiration thru the eye. Therefore in aiming *look attentively* not only at the ball but also at the objective point, i. e. the hole or direction flag so that the eye will *register clearly* on the mind the thing to be accomplished. Thus the mind may properly instruct the muscles on the thing to be done.

By looking *attentively*, I mean
FUNDAMENTAL 17 look, and continue to look till the
Aim Properly, i. e. eye focuses properly on the object-
Attentively. ive point. Then the eye will register
clearly and impressively on the
mind the exact distance and direction of the hole or
direction pole. I have many times caught a pupil in this
way—I will say, “Take a good look at that flag and then
look at me.” Every one will give the flag a vacant sort of
stare and then look at me, and I will say, “How many
yards would you say that flag is from you?” Instantly
the gaze returns to the flag and there it stays, fixed, wait-
ing while the eye adjusts its focus before the answer.
Then I will ask, “Why did you look back to the flag?”

Could you not have answered by question from the first look and if not, why?" Invariably the answer is, "Because I did not look at it attentively the first time."

Too many golfers give but a mere casual glance at the intended direction of play. They aim to play too much in a general direction. They do not *look attentively* at a certain point of direction of play. How can you expect your eye to register impressively on your mind the exact thing to be done if you do not *look attentively*.

Look attentively at the ball, then look attentively at the exact place where you desire to send it. Finally return your attention to the ball and hit it without delay before the eye gets out of focus. The eye tires very quickly and then gets out of focus.

CONCLUSION

It takes time for the eye to adjust its focus.

The mind must be attentive to a certain thing if the eye is to focus on it.

The eye must be focused on the objective point if the exact location of that point is to be impressively registered on the mind, and thus excite it to a keen control of muscular senses of direction and distance.

We cannot expect accurate control without concentration on the thing to be done.

FUNDAMENTAL 18

Proper Attitude of Mind

There is a great deal in the proper attitude of mind toward the game. There must be complete confidence if one is to have proper peace of mind. There is however a vast difference between confidence and over-confidence.

One must not be over-confident. One must simply feel that *he can* do the thing well, if he is to stand any chance of repeatedly doing it well.

The feeling that *you can* do a certain thing gives that certain peace of mind which makes it possible to do it.

Confidence is peace of mind.

FUNDAMENTAL 18 Peace of mind gives proper poise,
Have Peace of Mind and proper poise is everything.

Confidence is born of proper practice. To become upset as the result of a bad shot is to disturb the peace of mind. Allow your peace of mind to become disturbed and you shoot to pieces your confidence. Without confidence there can be no correct poise. Without correct poise there can be no good results.

When a player loses poise it means he is controlled by emotion. His thought is no longer clear nor his attention focused. To allow a trifling misfortune to produce this state of emotion with resulting confusion of thought and unsuccessful body control is to admit weakness of intellect.

Never be willing for one moment to allow anything to divert your attention from the business in hand or to ruffle your peace of mind. You must at all times be cool, calm, and collected.

FUNDAMENTAL 19

Diagnosis of Faults and Right Way to Correct Them

To correct faults: *first*, determine exact nature of ball's flight, *second*, analyze nature of impact, and *third*, trace cause by a review of the mechanics and dynamics of the swing.

FUNDAMENTAL 19 By a study of the ball's flight
Diagnose Correctly and you can determine what the nature
get a Proper Key- of the impact must have been. By
Thought for Cure of a review of the Mechanics and
Errors. Dynamics of the swing you can
determine what must be the cause
of any particular kind of an impact,
and the cure should then be obvious. It is then simply
a matter of effecting a cure in a psychologically correct
way, i. e. there is always some *key-thought* that opens the
door to correction of errors. For example, there are
players who say "I never will learn to shift my weight,"
which might prove to be quite true, and why? Because
they do not fasten their minds to some *key-thought* that
is diametrically opposed to their error. The most suc-
cessful *key-thought* for teaching anybody to shift his
weight is *skid your right toe 2 to 4 inches along the ground
towards your left toe as you hit the ball.*

You must shift your weight off your right foot in
order to skid your toe. You cannot drag your toe along
the ground and at the same time stand on it. Try it and
see. If you are troubled with the shifting of your weight,

go out and drive balls without caring what happens to the ball or the rest of your swing. Miss the ball entirely if you like *but skid that toe*. Do it often enough and it will become an unconscious *habit*. Then forget it, and devote your attention to the ball.

The same *key-thought* will not work in the case of every individual, and therefore your instructor must be a bit of a psychologist, and able to read people's minds and suggest a *key-thought* that is most likely to have the desired effect.

I have no doubt the number of *key-thoughts* I have used in my life work as a teacher of Golf would fill this book from cover to cover. So do not get discouraged in your search for the psychologically correct *key-thought* to help you correct your troubles. There is sure to be one and you must keep trying till you find it.

FUNDAMENTAL 20

PER=SE=VER=ANCE

Continue in a state of grace
until it is succeeded by a state of glory

SUMMARY OF GOLF PSYCHOLOGY

In order to make use of all our faculties to their maximum capacity there are seven mental aspects of the golf problem which should be pondered over deeply and mastered. Their order is as follows:

1 Wake up your subconscious mind to the business of controlling your stroke by a brief conscious review of the most essential things to be done to prevent failure, i. e. when you play golf, think golf, but do not let your conscious mind center itself on any one part of the stroke while in the act of making the stroke. Think of any particular part or parts of your stroke which you feel are in need of special attention just before you make the stroke, then let your subconscious mind rule.

2 Keep your eye on the ball to make sure of hitting it, but don't stare at it, or you will throw your eye out of focus and muscles out of poise.

3 Don't glance vacantly at the ball, or where you desire to send it, but look attentively, i. e. thoughtfully and wait till your eye and mind come to a focus, then hit it.

4 Don't let onlookers or anything else outside your particular sphere of work in hand claim the slightest bit of your attention or disturb your peace of mind. *Placidly ignore* everything and everybody but the business in hand which is to hit the ball correctly and by your stroke *place the ball* where you want it.

The expression, *place the ball*, has a distinct meaning to the golfer. The player must not merely hit the ball

and send it toward the hole—but must make such a mental and physical effort in executing stroke that the ball lands on a certain place. If there is to be any run on the ball, it should then run to a certain final resting place.

This *placing* of the ball applies to all shots but more especially to approach shots. It must be a part of your mental attitude to wish not only to hit the ball true, but also to desire to *place it* by your stroke in a certain spot. This mental effort to send the ball to a certain place should excite the physical effort necessary to put it there.

5 When playing you are not to worry yourself out of peace of mind by theorizing on the strokes you play. Let your unconscious mind play the stroke for you. Of course you must not expect your unconscious mind to perform wonders for you till you have gone thru the mill of a great deal of practice of proper theory. We might say that the beginner at first has little or no golf sense. It comes only with a great deal of practice. It is the reward of the patient and persevering.

There are some who play golf so that you would almost think them jointed dolls. They play solely by mechanical theory. To the finished golfer they are nothing but beginners. A lot of them certainly look and act the part, physically and mentally. They think, and think, and think, and think, and it is an awful bore to play with them. The finished golfer takes his time sizing up his *shot* (not his stroke) and when he has done this he goes right up and hits the ball. In sizing up a shot you do not look at the ball as much as at the place

where you want to put it. As you study the place where you want to put the ball, the inspiration to put it there comes over you. That is the time to hit the ball before you lose the inspiration of putting it there.

6 When you have failed to produce a satisfactory shot in the course of a match game, then is the time to call theory to your assistance to enable you to diagnose the trouble properly. When you have diagnosed your trouble correctly store that knowledge away in your memory, and *after* the match make great use of the *Twentieth* Golf Fundamental.

7 Persevere in practice of correct theory till the proper execution of the shot has become automatic and confidence is restored.

FINAL TABULATION OF ALL GOLF
FUNDAMENTALS

- 1 Keep your head steady.
- 2 Keep your left arm stiff.
- 3 With your right arm guide club thru proper swing slope.
- 4 With your shoulder rotary action control the parallel of your swing.
- 5 With your hands, control the facing of the club face, and therewith the direction of the ball's flight.
- 6 Shift your body weight.
- 7 Put the power of your shoulder rotary action into your stroke.
- 8 Put the power of your arm swing action into your stroke.
- 9 Put the power of your wrist snap action into your stroke.
- 10 Co-ordinate all parts of the swing.
- 11 Time the stroke.
- 12 With your hands transmit the full power of your stroke thru your club to the ball.
- 13 Apply power without overstraining.
- 14 Learn to make your swing automatic.
- 15 When you play learn to concentrate all your attention on the thing to be done—*play the shot*.
- 16 Be sure always to look attentively at the ball, and without staring at it.
- 17 Take aim properly.
- 18 At all times have "Peace of mind."
- 19 Always go about correcting your errors in the right way.
- 20 Never allow yourself to become so discouraged as to entertain for a single instant the thought of giving up. Golf is a most beneficial exercise even if you do not play in par.

GENERAL SUMMARY OF THE GOLF SWING

Geometric

The golf club should travel in a proper oblique, elliptic plane about a steady center, with horizontal diameter of ellipse parallel—and club face square to the line of play. All this is to be attained by properly synchronizing lateral and vertical curves.

Physical

Lateral curve is created chiefly by rotation of the shoulders, vertical curve by action of arms and wrists. Therefore it is proper blending of the correct amount of shoulder, arm and wrist action, plus the parallel motion of the hips, and control of club face by the hands, that creates the ideal golf swing.

Dynamic

The secret of distance is *speed* plus *momentum*. When all the foregoing are properly applied, the result is greatest distance and good direction with least effort. There should be no very great effort, as overstrain causes inaccuracy. The golf swing should be a powerful yet easy and graceful rhythm of precise motion.

Psychological

Learn to go about the game in a proper frame of mind, making the utmost use of your mental faculties.

CONCLUSION REGARDING THE GOLF SWING

The Golf Swing is an art. To master this art it should first be reduced to a science, based on facts and data gathered from analysis along sound geometric, physical, mechanical, dynamic, and psychological lines, and a theory should be evolved which covers every point, and which can be proved to be correct.

Book 4

SEYMOUR DUNN'S
ORTHODOXY OF STYLE

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SEYMOUR DUNN'S ORTHODOXY OF STYLE

Good style is highly desirable but not essential. Every student of the game should acquire a complete knowledge of orthodoxy of style, because the orthodox suggests how we might best apply the essentials.

For style study the illustrations that follow.

Always start to learn the game with a mid-iron, because it is the easiest club of the entire set to use.

Learn the full swing first as the shorter swings are mere variations of the full swing.

Divide the swing into three positions: (1) *Address*, (2) *Top*, (3) *Finish*. First learn each position. Next learn to go properly from one position to the other.

THE FULL-SWING STROKE

First Position, The Address

How to place the club. This means 1 Adjust the club handle so that the club rests on that part of the sole midway between heel and toe.

2 Set the bottom edge of the blade at right angles to the line of play. The top edge and the bottom edge of the blade of an iron club are not parallel to each other. Go by the bottom edge, ignoring the top edge. The face of an iron club is built from the bottom edge up.

3 Have the club shaft at right angles to the line of play, i. e., neither leaning towards nor away from the direction of play.

THE GRIP

To my mind the orthodox grip is the overlapping, finger grip with left thumb on the handle. There are, however, many good players who still adhere to the old fashioned two V grip. My reasons for adopting the overlapping, finger grip with left thumb on the handle are several. Reason 1 With the left thumb on the handle you have a fulcrum for the left hand action, (note, I did not say wrist action). With this thumb on handle grip, there is an action in the left hand quite distinct from, and in addition to the wrist action, which you cannot get with the two V grip. At the top of the swing the club

Left Hand Action	handle comes away from the base of the palm of the left hand, which is merely a resting point. The club is
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held entirely in the fingers, and more especially in the second, third and fourth fingers of the left hand. The club rests upon the left thumb. See Illustration 181, page 153. The thumb is a fulcrum which the second, third and fourth fingers of the left hand pull down against during the downward stroke, and it is possible to develop no small amount of speed from this left hand action.

The palm of the right hand should completely cover the left thumb to support it, Illustration 182, page 153. My objection to the two V grip is very evident, i.e., take away the left thumb from off the handle and you have no fulcrum for left hand action, and consequently you will get none. Also, if the player starts out with a palm grip it will be impossible to get left hand action because if the palm grip is released at all at the top of the swing, the club will slip out of the palm into the fingers and it would be impossible to say just how the club might be facing when it returned to the ball.

Reason 2 for the overlapping, finger grip. The more sensitive Finger Grip gives most Acute Sense of Feeling in Club Head nerves are in the finger ends, and especially in the end of the thumb and forefinger. We want the most accurate sense of feeling possible in the club head. With the club handle held between the tip of the thumb and forefinger it is possible to get feeling in the club head so that it seems almost as if there were prolonged nerves which ran from the thumb and forefinger down the shaft into the very club head itself. Without the thumb upon



175

Taking Club Handle in Fingers—
Correct way



176

The Left-hand Grippers, Second,
Third and Fourth Fingers.
Club Handle is well Placed
in Roots of the Fingers
—Correct



177

Thumb and Index Finger, Feelers,
Properly Set, i. e. Opposite
each other—Correct



178

Taking Club Handle in Palm of
Hand— Incorrect. See above
for Correct



179

Club Handle is not well Encircled
by the Grippers—Incorrect.



180

Thumb and Index Fingers Wrongly
Placed, not Opposite each
other but Spread Apart—
Incorrect

the club handle it is impossible to get the same acute sense of feeling in the club head. For the same reason that the club handle should be held in the ends of the thumb and forefinger, it should be held *in the fingers* of the second, third and fourth fingers of the left hand and not in the palm, because then, they too give a more acute sense of feeling in the club. See Illustration 176, page 151.

In Some Cases Overlapping Grip Gives Quicker Wrist Action

Reason 3 By overlapping we shorten the distance between the right hand power and the left wrist fulcrum, which quickens the wrist action. For convincing proof of the truth of this statement take hold of a club with your hands two feet apart and try to swing the club with your wrists, you will soon find that the closer you bring your hands together the quicker the action of the club. It seems like an insignificant matter to eliminate one little finger to get the hands a little bit closer together, nevertheless it does increase the speed of the club considerably *provided you have very strong hands.*

In Some Cases Overlapping Grip Balances the Strength of the Hands

Reason 4 Most players are stronger in the right hand than in the left; elimination of the little finger places the right hand at a disadvantage, and this helps to equalize and balance the work of the two.



181

Illustrating Hand Action. Note how Club Handle has come away from the Heel of the Palm of the Hand—Correct



182

Illustrating How the Palm of the Right Hand Supports and adds Strength to the Left Thumb which acts as the Fulcrum of the Hand Action—Correct



183

Illustrating How the Club Handle should be Gripped in at the very Roots of the Fingers of both Hands—Correct



184

Illustrating How the Left Thumb is Placed on the Club Handle, just a mere Suggestion to one Side—Correct

Overlapping Grip Best
for Strong Hands,
two V Grip for Weak
Hands

I am not advocating the overlapping, finger grip because I use it myself. I did not always use it, in fact I fought against it for many years, but finally had to acknowledge it to be the superior form of grip for the large majority. Therefore I now accept it as orthodox, and teach it to all my pupils except those with very weak hands.

Eliminating the little finger of right hand brings third finger of right hand next to forefinger of left hand on club handle. The little finger is then allowed to override the division between forefinger of left hand and third finger of right.

The second, third and fourth fingers of the left hand do most of the gripping. The left thumb and forefingers I look upon as the feelers. In order that I shall not grip too tightly with my right hand I grip with the second finger of my right hand only. The callouses on my hands prove this. My right thumb and forefinger are used as feelers also, rather than grippers.

Next to the proper gripping of the club comes the proper *set* of the hands. This has already been dealt with under mechanical laws of the golf swing, fundamental 5.



185

Illustrating Third Finger of Right Hand placed next to the Fore Finger of the Left Hand—Correct



186

Illustrating the Little Finger of Right Hand over-riding Fore Finger of Left Hand—Correct Completed Grip



187

A Common Error. The Hands are not Braced against each other—Incorrect hand set



188

Correct Completed Grip, showing Palm of Right Hand almost completely Covering Left Thumb, which fits perfectly into Groove of Palm of Right Hand



Right hand

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Left hand

Note the callous on the second (longest) finger of right hand, and also on the fourth (little), third and second fingers of left hand. It will be seen there are no callouses on the palm of the hands at the roots of the fingers. This is because the club handle is held in the fingers.

THE STANCE

For driving with the ball teed up, the player should pick the ball off clean, i. e. not dig the ground. The ball should be played from opposite a point about one inch inside the left heel. The object of this is to give the player a good chance to shift the body weight vigorously, and strike the ball at the climax of this body weight shifting movement.

The very fact that the ball is forward excites this forward movement—the all important essential and source of power of the follow thru. Were the ball not forward, you could not follow thru and at the same time pick the ball off clean driving it upward. Of course we do not always have the ball *teed up*. Frequently a full brassy or iron shot must be played with the ball in a *cuppy* lie or lying just *fair* on the grass. So we may summerize briefly that there are three kinds of lies:

- 1 Teed up
- 2 Lying fair
- 3 Cuppy lie

These three conditions are dealt with respectively thus:

- 1 The ball is played off the left heel.
- 2 The ball is played from off the center of the two heels.
- 3 The ball is played from more nearly off the right heel.

The trajectory of the ball's flight will be different in each case:

- 1 High
- 2 Medium high
- 3 Low

The right foot should be from two to four inches nearer line of play than the left, because this brings right hip and shoulder nearer the ball. They are then able to do more effective work.

The toes should be turned outward, the left more especially. Just how far out depends on the suppleness or stiffness of the joints of the particular player; not very far out for a supple jointed person, well out for a stiff jointed person, because stiff joints cannot turn as far as supple ones can. Placing the feet thus controls to a great extent the turn of the player's body, and therefore the parallel of the swing. If the left toe is turned well out, it gives the player a better chance to go well forward in the follow thru.

With right foot advanced, i. e. nearer line of play than left, the position of the feet is known as the *Open Stance*. With this *Open Stance* some players are inclined to **Wheel* too much to the left as they go thru to the finish of the stroke causing misdirection to the left. In such cases the *square* or *shut* stance might produce better direction.

*Wheel; excessive turning of the body.

Square stance is both feet equidistant from the line of play.

Shut stance is left foot in advance of right.

Open stance is orthodox.

The proper distance for each player to stand from the ball can be determined by experiment only. Some do better near the ball, while others do better well away from it. Then too it depends upon the club you are using. With shorter clubs you stand nearer the ball than you would with longer clubs.

In motion pictures taken for purpose of analyzing the swing, frames were set up on which cords were fastened 6 inches apart. Thus exact measurements could be taken of any position or motion or order of one motion relative to another. See Illustration 152, page 110. This gives a side view of my swing with the mid-iron. The lines indicate that my right toe is 26 inches from the line of play, while my left toe is 30 inches from it. With the driver I stand 4 inches further from the ball than I do with the mid-iron, while with the pitcher I stand 4 inches near than I do with the mid-iron. I stand closer to the ball for short swings than I do for full swings. Also the shorter the swing the closer the feet are together. See Illustration 132, page 109, using a mid-iron. It shows the heels about 17 inches apart.

You should stand so that you feel you have to reach comfortably for the ball, yet have the feet near enough to it to crowd your weight back on your heels. Never stand with the weight of the body on the balls of the feet.

as this places the calf muscles under considerable tension and when you make your stroke you will be very apt to rise on your toes. This will cause you to top the ball. Sit back on your heels and reach for the ball—this is good advice, but don't let your reaching lead you into excessive stooping.

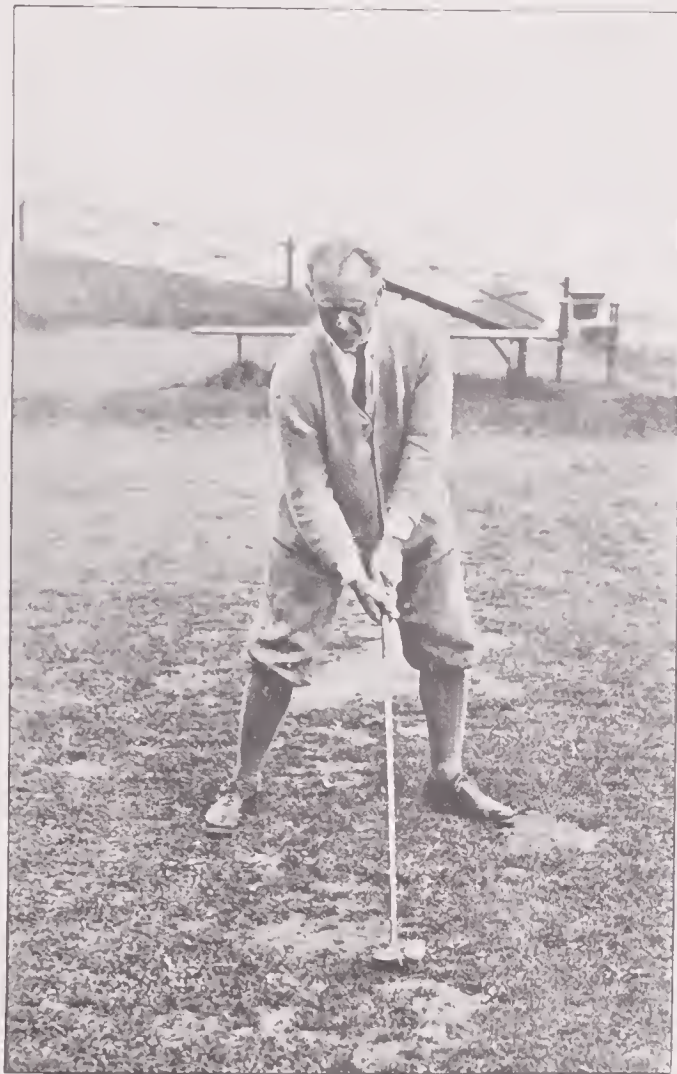
The knees should be *slightly* flexed. To have them back straight and stiff at the joint sets up a rigidity that goes all thru the body.

The stoop should be in the spinal column. Don't have the upper part of the body leaning over from the hip joints, keep your seat drawn in, slouchy style. This is the only position in which all the body muscles can be properly relaxed. Don't assume too much stoop. It is too difficult to retain it at the top of the swing. Should you straighten up you might not resume the same stoop again on the way down, in which case you will be very apt to top the ball. The commonest cause of topping is assuming too much stoop at the start, and not being able to retain it.

The shoulders should be tilted, the right lower than the left, because the right hand occupies a lower position than the left, and also experience has taught us that it is better to have the right arm bent slightly more than the left, as we can punch the ball out better with it so.

The player's head should be poised so that both eyes are parallel with the line of play. You can then better visualize the line of play.

The left arm should be as straight as it is possible to have it without suffering discomfort at any point in the



190 DRIVING—ADDRESS POSITION
THE FIRST POSITION OF THE GOLF SWING

swing. The straighter it is the better; the more leverage can be gotten out of it. The back of the left elbow should be turned *facing* the line of play—not pointing but *facing*. To turn the elbow facing the line of play, it is necessary to twist the left arm outward well away from the side of the body.

The right arm should be tucked well in, with the elbow close to the body, but not so close that it will catch on the right hip when playing the short swings. The right elbow should work closely around about the right hip.

We have now completed the first position and are ready for the preliminary waggle.

PRELIMINARY WAGGLE

By all means make use of the preliminary waggle as this excites the proper muscles into readiness for the stroke itself. It is your chance to key up your sense of touch, also your final chance to concentrate upon the stroke to be played. However don't over-do the preliminary waggle—you may bore your companions. Three preliminary waggles should be ample for anybody. See illustrations, page 164.



HOW TO DO THE PRELIMINARY WAGGLE FOR THE FULL SWING STROKE

SECOND POSITION "TOP OF SWING"

Top of the swing is the highest point to which a player should swing the club in the upswing preparatory to the downward stroke to the ball.

In this position the greater part of the player's weight should be shifted to the right heel, because unless you shift a goodly portion of your weight back you cannot shift it forward. In this case there could be no follow thru. Any weight that is on the left foot at the top of the swing cannot be shifted forward when going to the finish, as it is already there.

The club should not be swung beyond a horizontal position over the shoulder; you would be apt to lose control of your swing. A player of very powerful physique is better off with a shortish swing. Only players of slender physique can, as a rule, get any advantage from an extra long swing, and they must make special study of rhythm, because their stroke must be more of a sweep than a hit. The *hit* is more adapted to the short swinger.

The elbows should be kept moderately close to each other. This slightly compresses the upper arms against the body which steadies them. A good trick which teaches this habit is to place a handkerchief under the right arm pit and swing without dropping it.

The knees should not be allowed to change their bend as was made clear under Fundamental 1 because to do so would probably disturb the swing center, but both should be allowed to swing with the rotation of the body, so that the ankle joints can absorb some of the body twist.

The body twist should be distributed evenly thruout the various joints affected, i. e. ankles, hips and spinal column. There should be no great strain or tension anywhere except what is necessary to keep the left arm nearly straight.

The grip should be so loose that the club is held by the crook in the little fingers of the left hand and supported on the thumb of the same hand, the palm of the right hand resting gently but firmly against the left thumb assisting it in supporting the club. The fingers do not tighten in their grip till you hit the ball.

The whole position should suggest ease, grace and power.



197 DRIVING—TOP OF SWING—SECOND POSITION

An Action Photo

This shows a swing rather too long

THIRD POSITION "FINISH OF SWING"

The third position is the furthest point to which a player should carry the swing at the end of the stroke.

Tho the stroke is over and done with, and the ball has long since been hit, yet the position which the player assumes at the end of the stroke is of the utmost importance for several very good reasons.

1 There should be perfect balance of the body *thruout* the stroke. To *retain* oneself in a proper golf attitude at the end of the stroke requires perfect balance. The player who strives to *retain a perfect balance at the end* of the stroke must necessarily preserve a perfect balance *during* the stroke. The stroke itself has so many parts, all to be done so quickly, that the retention of balance during the stroke must be taken care of as one of the many parts of the swing. This is best accomplished by trying to establish the habit of retaining a perfect balance at the *end* of the swing. Since you cannot lose your balance during the stroke and have it at the finish, try to finish your swing in proper position. Thus you will retain a perfect balance.

2 There is only one correct road to the proper finish and that road always gets the ball. Try to finish right and your stroke during impact will be more likely to be right.

3 You might as well look like a real golfer when you are about it as not. Try to finish your swings properly and you will be more apt to be a golfer than if you finish "any-old-way".

At the finish of our swing, the position should correspond very much with the position we assumed at the top of our swing. The only great difference is that we have moved our head forward from its original position at the top of the swing. This is caused by the complete shifting of the body weight in generating the follow thru power. I always find when I am driving a long ball, and driving well, that my body weight has been shifted so completely forward that my right toe has been dragged two or three inches along the ground.

There should be no tenseness about the position. One should relax into an easy, graceful and natural position, and this position should be retained while you watch the flight of the ball.

Beginners hesitate to do this because they think it looks affected. You might as well stand this way as any other, since it will really help your play, and console yourself with the thought that not one in a thousand will be looking at you at that particular moment, since all will be watching your ball in flight. Anyway, why should you care if it helps you to play better?

I have not given a very detailed description of these positions because there is nothing essential about style. All the essential matters are taken care of under the mechanical and dynamic laws of the golf swing. Orthodoxy of style merely suggests how you may best go about the business of applying the fundamentals. Your own individual style will assert itself in the end anyway, so study the essentials first. Then under the guidance of a capable instructor find out how you may best apply them.



198 DRIVING—FINISH OF SWING—THIRD POSITION

An Action Photo

Note scratch on ground made by right toe. The body weight was so completely shifted that the right toe was dragged along the ground

I would urge, however, that you stick as closely as possible to the orthodox style for the sake of the appearance of your swing. Depart from the orthodox only when a good reason is found. There is a great pleasure and sense of comfort in knowing that your swing looks right.

All strokes should be executed with ease, grace, and rhythm. There should be a looseness, about the swing which however should not be carried to the extent of sloppiness, for with looseness and ease of the swing there should be a firmness and compactness about the stroke. There should be *nothing stiff about the swing, nothing sloppy about the stroke.*

The full-swing stroke might be briefly described as action of the hips, shoulders, arms and wrists, or *full hip action, full shoulder action, full arm action, and full wrist action.*



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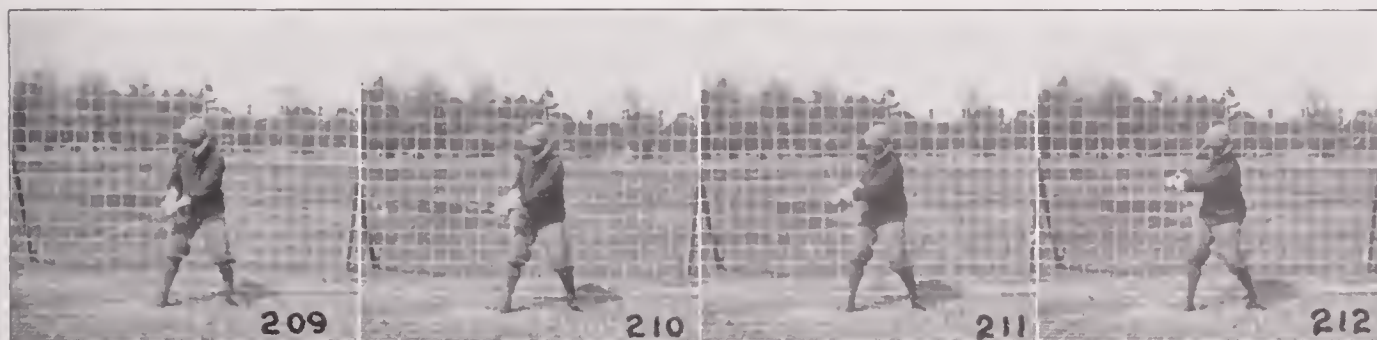


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THE FULL SWING — DRIVING STROKE

FULL-SWING STROKE WITH BRASSIE

When the ball is played without a tee, as from the fairway, it should be played from more nearly opposite the center of the stance, and the turf scalped in front of where the ball lay. There should be a greater sense of firmness and compactness about the stroke than when the ball is played from off a tee.



FULL-SWING BRASSIE STROKE FROM FAIR LIE
 Ball is Opposite Center of Stance



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Address---Top---and Finish Positions of Full Swing Brassie Shot Stroke

FULL-SWING STROKE WITH MID-IRON

Most authors tell us not to take a full-swing stroke with mid-iron. However I find all the star professional players do it, and I know of no reason why we should not. Why take a three-quarter swing-stroke and drop the ball short in a bunker when by a full-swing stroke you can put it on the green?



THE FULL SWING MID-IRON STROKE

Action Pictures in Motion Picture Series



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ACTION PICTURES

The Full Swing Stroke with Mid-iron for a Carry of 180 Yards onto a Green with Little or no Run on the Ball after Alighting

THREE-QUARTER-SWING STROKE

The chief difference between the full-swing and the three-quarter-swing is that the swing is a little shorter, effected chiefly by the shortening of the arm action. The arms do not raise the club so high, and there is yet a greater sense of firmness and compactness about the stroke. This firmness and compactness increases as the swings grow shorter.

The swing may therefore be briefly described as, *Three-quarter-hip action, Three-quarter-shoulder action, Three-quarter-arm action, Full-wrist action, one-quarter-wrist-twist in addition to sag*, to make up for shortened shoulder action. As the swings shorten the wrist sag merges into a definite twist of the wrist right from the start of the back swing.

The club is generally gripped a little lower down the handle, the stance is a little closer and nearer to the ball. This holds good thruout all the other shorter swings. The shorter the swing, the closer the player's feet should be together, and the nearer the player should stand to the ball. Also the hold on the club should be lower.

The three-quarter-swing stroke is virtually the same for all approach clubs which are: Cleek, Driving-iron, Mid-iron, Jigger-iron, Mashie, Mid-mashie, and Pitcher.

The oblique plane of the swing of course is different, due to the difference in the length of the shafts of these several clubs. The diameter of the swing is also slightly different. In all other respects the swing is the same. The club's loft is the chief factor in producing the differ-

ent ranges which the different clubs will produce. The three-quarter-swing stroke makes a difference of from 15 to 20 yards less than the full-swing stroke would produce with the same club.

In all swings where vertical wrist action is used, there should be a full 90° lateral turn of the club head each way to top and finish of swing. If the swing is of a length where the shoulders do not make a full 90° turn to right and left, the wrists must make up the deficiency.



ACTION PICTURES

The Three-Quarter-Swing Stroke with Mid-iron in Motion Picture Series

HALF-SWING STROKE

The half-swing stroke differs from the three-quarter in that the swing is shorter, the difference being effected chiefly by reducing the extent of the upward and downward action. The club rises by bending action of the wrists chiefly. The swing might therefore be briefly described as follows: *Half-hip action, Half-shoulder action, Half-vertical-arm action, Full-wrist action, Half-wrist-twist in addition to the sag.*

The half-swing stroke may be used with any of the approach clubs and the difference in yards will be from 30 to 40 yards less than a full shot, 30 in the case of the pitcher, and 40 in the case of the cleek, and a corresponding difference in between for the in-between clubs.



ACTION PICTURES

The Half-Swing Stroke, with Mashie in Motion Picture Series

QUARTER-SWING STROKE

The quarter-swing stroke differs from the half-swing stroke chiefly in the amount of power applied. The length of the two swings is very much the same. The difference is effected mainly by elimination of the hip power. The player should not shift the body weight from one foot to the other, but play the stroke with the body weight on one foot or the other thruout, applying the wrists vigorously. Personally I prefer to keep my weight on my right foot thruout the stroke, and therefore, and because there is no hip power in the stroke, the ball does not go as far as it would were hip power applied. The wrists are unaided by the hips, the stroke being played almost entirely by the wrists.

The shoulders do not turn as much as in the longer swings and therefore the wrists get very little if any assistance from them. What lateral rotation the shoulders do not supply is made up for by a very considerable twist of the wrists. The arms do very little to assist the wrists. What ever action they do make is done more in sympathy with the wrists than to generate power.

The quarter-swing stroke might truly be called a wrist stroke since both the lateral and vertical action is done almost entirely by them alone.

When the ball lies none too well, as in a cuppy lie, or in heavy grass, or in soft sand, the wrists should be used vigorously or not at all. If the wrists cannot be used vigorously because it might send the ball too far, then do not use wrist action at all. Play the stiff-wrist-arm-and-shoulder-swing *chip-stroke*. There is nothing



ACTION PICTURES

The Quarter-Swing Stroke in Motion Picture Series

so treacherous as a *spared* wrist-swing stroke when the ball is in a poor lie.

The quarter-swing stroke might be briefly described as: *No parallel hip action, one quarter shoulder action, one quarter vertical arm action, the full vertical wrist action, three-quarter-twist-wrist action to make up for the greatly reduced shoulder action.*

STIFF-WRIST-ARM-AND-SHOULDER-SWING CHIP-STROKE

The stiff-wrist-arm-and-shoulder-swing chip-stroke is used for approach shots of any length less than the quarter-swing stroke, and especially for lies that are none too good—such as heavy grass.

Like other approach strokes it may be played in various forms, the principal forms being:

- 1 Running chip-stroke, usually played with mid-iron.
- 2 Pitch-and-run chip-stroke, usually played with mashie.
- 3 Pitching chip-stroke, usually played with pitcher.

The different loft of the clubs used is chiefly responsible for the difference in the ball's trajectory, but there is also a slight difference in the manner of handling the clubs. For all running chip-strokes the player's body should lean considerably towards the hole so as to advance the swing center. This enables the player to strike the ball a "beat it down" stroke thus forcing the ball to run along the ground. It safeguards the player against the fatal error of hitting the ground first before the ball. If conditions of ground undulation encountered require that the ball be made to run, handle the club and so strike the ball as to compel it to hug the ground and run along it. Do not let the ball rise and pitch. It might pitch just where you did not want it to and be deflected from the line. In playing the stiff-wrist-arm-and-shoulder-swing running chip-stroke the ball is struck a distinct *hit*.

For the stiff-wrist-arm-and-shoulder-swing pitch-and-run chip-stroke, the stroke should be played normally, i. e. the ball should be struck when the club reaches the bottom of the arc of the swing. The club should be carried thru the grass in a manner which might be described as: "scraping the ball out of the grass". Of course, the student understands the ball must be *fairly struck*, the rules of the game require it. Nevertheless, it is quite within the bounds of possibility to *strike* the ball a certain peculiar kind of *stroke*. For instance, we might strike the ball a sweeping stroke, or a pushing stroke, or a beat-it-down stroke, or a scoop-it-up stroke, or a jerk-it-out-stroke, or a scrape-it-out stroke, or a hit-it-a-smart-tap stroke. Most of these terms are clearly barred by the rules, but what the rules mean, and what I mean are two entirely different things. I mean that the ball should be *struck* as the rules require, and the rules do not prohibit striking the ball a pushing, jerking, or scraping *stroke*. When the ball lies in fairly long grass, strike it a scoop-it-up stroke. This can be done only with the wrists stiff and the action of the stroke coming entirely out of the right arm and right shoulder, every muscle set firm.

For the stiff-wrist-arm-and-shoulder pitching chip-stroke, the ball should be struck a "scrape-it-up and throw-it stroke". The feeling I have when I play this kind of stroke is that I "scoop the ball up and toss it onto the green with my club", just as one might scoop up a handful of water and throw it over a fellow bather all in one continuous movement. By striking the ball in this



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ACTION PICTURES The Stiff-Wrist-Arm-and-Shoulder-Swing
Running Chip-Stroke, with Mid-iron

way one can become certain of extracting the ball from almost any bad lie and at the same time *control* the distance by the throw part of the movement. When I have one of these strokes to play, I go about it in a frame of mind as if the ball were a 10-lb. weight, and a stubborn 10-lb. weight at that. The ball seems determined to drop short into a bunker which might be between me and the green, but I am going to be more determined that it is not going to flub into the bunker, but is going to be scooped up out of that deep grass by sheer muscular effort and be lifted on the green. At the same time there is going to be no more speed in the stroke than is required to lift it out and on to the green. By sheer brute strength I am going to maintain that speed no matter what the club may encounter. I say to myself, so to speak, "The handle of the club is going to come with me even if the club head and ball do not."

One is much surer of at least a fair result if the heavy-lie chip-shots are played this way than by a flimsy wrist action.

In playing the stiff-wrist-arm-and-shoulder-swing chip-stroke, a short arm-and-shoulder action, without any wrist action at all, is best. The heavier muscles of the arms and shoulders if firmly set are much more positive and compelling in their action than a loose flimsy wrist action. If ball's lie is none too good, there is nothing so treacherous as a spared wrist action. It is almost a foregone conclusion that you will fizzle the shot, because there is no backbone in a loose spared-wrist action.

With the stiff-wrist-arm-and-shoulder-swing chip-stroke be sure to grip very tight with both hands and be



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ACTION PICTURES

Pitch-and-Run Stiff-Wrist-Arm-and-Shoulder-Swing-Chip-Shot Stroke with Mashie

more especially sure to grip tight with the right hand. This is just the reverse of what should be done when a wrist action stroke is being played. If the wrists are to be used the grip must be loose. Gripping tight stiffens the wrists. Since we want stiff wrists in the stiff-wrist-arm-and-shoulder-swing chip-stroke, do not be afraid to grip as hard as you can, since stiff wrists is just what we need to put backbone into the stroke.

The right hand and right arm should be master in the stiff-wrist-arm-and-shoulder-swing chip-stroke because better control is possible. In order that the right hand may exercise full control over the club do not overlap with the little finger of the right hand. Place all fingers on the club handle. Also place the right thumb squarely on *top* of the handle as well as the left thumb.

Many players fail miserably in these short shots from long grass because they accelerate the speed of the club above what it should be for the distance to be played under normal conditions. They figure the acceleration will overcome the grass resistance. This is quite wrong because when the ball comes out more easily than they expected, away goes the ball clean over the green like a crazy thing and perhaps into the bunker beyond. Not extra speed but sufficient momentum to maintain the proper speed is what is needed. Estimate the speed required for ordinary circumstances and by firm work with firmly set arm and shoulder muscles, back up the speed so as to maintain it in spite of adverse possibilities. Anticipate also the possible accidental contact of the club with the ground before it reaches the ball and be prepared with enough muscular effort to drag the club,



ACTION PICTURES

The Pitch-and-Run Stiff-Wrist-Arm-and-Shoulder-Swing Chip-Shot-Stroke for 60 Yards in Motion Picture Series

ball and everything thru and out. *If the club head goes thru, the ball must. If the club's speed is right the ball must go the right distance.*

In playing the running-chip-shots I like to play the ball from off the left heel, with the body weight on the left foot, and a pronounced lean of the body towards the hole.

The pitch-and-run-chip-shots I like to play with the ball opposite the center of the heels with the feet close together except when the ball is to be played from heavy grass. Then the feet should be well apart in order to get well braced for the necessary strength to be used.

The pitching-chip-shots I like to play with the ball more nearly opposite the right heel. There is absolutely no logical reason why I should particularly prefer to play the different forms of the chip-shot with the ball in the different places mentioned. It is simply a personal fancy.

I could reverse the order and get the same results. In fact I do not always adhere to this order myself. See Illustrations 291, 292, 293, and 294, page 193. They show me playing a pitch-and-run-chip-stroke off the left heel, while the motion picture group on page 195 show me playing the same stroke off the center. Center is orthodox.

In the matter of style I play my shots as the inspiration of the moment leads me.

In this stiff-wrist-arm-and-shoulder-swing stroke there is absolutely no wrist action of any kind, neither twist or bend. The club head does not turn 90° to the right and left and the swing has practically no lateral curve in it. The swing so far as lateral curve is concerned



ACTION PICTURES

The Stiff-Wrist-Arm-and-Shoulder-Swing Pitching-Chip-Shot-Stroke, 30 Yards, in Motion Picture Series

is almost a dead straight line from start to finish along the line of play. The shoulder action of course causes a slight lateral curve, but very slight.

Depending on the length of the swing the stiff-wrist-arm-and-shoulder-swing chip-stroke might be briefly described as, *little or no hip action, partial shoulder action, partial arm action, no wrist action.*

SPARED-LOOSE-WRIST-SWING-CHIP-STROKE

The spared-loose-wrist-swing chip-stroke is used for approach strokes of any length less than the quarter stroke. It is only for lies that are good, i. e. when the ball sits up well clear of all obstruction that would interfere with the free swing of the club. The stroke may be used for chipping out of a sand bunker provided the sand is packed down hard and smooth as the sand in bunkers sometimes is after a rain, or when the ball lies practically teed up in the bunker as occasionally happens.

It must always be possible to shave the ball off clean without touching the sand at all. The stroke is an extremely delicate one and there is absolutely no margin for error. The club must literally shave the ball off clean. This is where absolute steadiness of the player's head is imperative.

The advantage to be gained from this spared-loose-wrist-swing-stroke is that it is possible to get a back spin on the ball that will stop it almost dead when a pitcher is used. Therefore greater accuracy in pitching the ball up to the hole is possible than would be the case with the stiff-wrist-arm- and-shoulder-swing chip-stroke.

If the ball lies well and extreme delicacy of touch is required, one might play either a running up or pitching-chip-shot with this loose spared-wrist-action-stroke but you must feel so inspired that there is greater confidence in your ability to execute the shot more successfully that way. The chief purpose of the stroke is to get backspin stop on the ball when nothing else would do. If the ball lay none too well and there was a bunker between me and

the green I would not dream of using this stroke; instead I would play the "Jab" stroke, or the stiff-wrist-arm-and-shoulder-swing stroke. There is nothing so treacherous as the spared-loose-wrist-swing stroke. The least thing will upset it, in which case the result is almost certain to be a complete farce.

I have seen many a championship lost, and many more fine scores completely ruined by some of the most noted players on account of using the loose-spared-wrist-action stroke when the stiff-wrist-arm-and-shoulder-swing stroke should have been used.

Nevertheless, the spared-wrist stroke is one of the regular strokes of the game and should be mastered. There are occasions when absolutely nothing else would do.

If the spared-wrist stroke is used for a running up shot, the ball is struck a *tap*. For the pitch and run a *flick*. For pitching with dead stop a *flicking cut under the ball*.

As is the case with the stiff-wrist-arm-and-shoulder-swing chip-strokes the ball may be played from off the left heel, the center, or the right heel as the fancy or natural style of the player dictates.

In playing with the ball opposite the left heel, the body weight should be entirely upon the left foot. The body is then more likely to be absolutely steady. If played off the right heel, have the body weight on the right foot.

If played off the center of the heels, have the feet so close together that the heels touch each other or nearly



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ACTION PICTURES The Spared-Loose-Wrist-Swing-Chip Stroke

so. The reason for this is to centralize the balance on one point. With the feet wide apart, you have a wide base to move about on. With a centralized base you cannot move about without losing your equilibrium. Since no great effort of the shoulders is to be made in this spared-wrist stroke, the narrow stance may be used.

In the running-spared-wrist-chip-stroke the ball may be struck a *downward* tap, or tapped off clean at the *bottom* of the arc of the swing.

In both the pitch-and-run, and pitching-spared-wrist-chip-stroke the ball should be flicked off clean at the bottom of the arc of the swing.

For loose-spared-wrist-action strokes, the grip must be very loose; the more delicate the stroke to be played, the looser the grip should be. The overlapping grip as outlined for the full swing is most desirable. One might even go one better and overlap with two fingers of the right hand on top of the first and second fingers of the left hand. This permits a yet freer and more delicate wrist action.

For this stroke the club should be held mainly between the thumbs and index fingers, as this permits a yet more delicate touch. The left hand must of course be the master of the two in order that the left wrist will be the fulcrum or center of the wrist action.

The spared-loose-wrist-swing chip-stroke may be briefly described as *no hip action, no shoulder action, no arm action, nothing but a combination of bending and twisting wrist action and only as much as the particular instance requires.*

I have stated above no shoulder action and no arm action. By that I mean there is no shoulder or arm action to generate power. The shoulders and arms do, however, have a slight action but this is only in sympathy with the wrists, i. e. they lend themselves to the wrists for the sake of avoiding stiff awkwardness.

THE JAB-SHOT STROKE

Scientific Stroke

The jab-stroke is used in two ways to jar the ball out of a bad cuppy lie.

1 The stroke may be used to make a ball jump up at a very sharp angle to clear a steep face such as is sometimes found in a grassy hollow at the edge of a green, and where the ball lies so badly cupped that it would be impossible to play an undercut shot. In playing the stroke for this purpose the club is jabbed into the ground an inch back of the ball with great force and in such a way as to cause an upheaval of the soil immediately back of and underneath the ball so that by this upheaval the ball is thrown up onto the green. There is no follow thru of the club head, the stroke being very much downward and the club head is buried in the soil under where the ball lay. Great care must be taken to not touch the ball with the club. The upheaval of the soil must do the work alone. See illustrations, page 206.

2 When the ball lies badly cupped and distance is required, *hit the ball* jarring it out. Drive the ball downward against the soil compressing it between the club and the ground so as to burst it out. The ball will take its rise from off the ground and sail away like a bullet. In this case the club head should be made to follow thru if possible. See illustrations, page 207.



THE JUMP-OUT-JAB-STROKE

A SCIENTIFIC STROKE



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DISTANCE JAB-STROKE

UNDERCUT-CUT-SHOT-STROKE

Scientific Stroke

In all cut-shot strokes “*cut*” means to strike the ball a glancing blow. A combination of errors of the golf swing (violations of the mechanical laws) is used to produce an abnormal result. The ball may be side-cut either way to produce a curved flight, to circumvent some obstacle such as a tree. Also it may be undercut to produce an abnormally high trajectory, whereby it may be made to rise high enough to clear an obstacle by going over it. Sometimes a ball is found in a deep wheel rut which is not running in the direction towards the hole but off somewhat at an angle. Because of the deepness of the rut the club must be swung in the direction of its course. In a case of this kind, the club may be swung in the course of the rut while the club face is kept facing towards the green. The ball will go in the direction in which the club faces if struck fairly. This is another form of cut-shot. *Cut*, then, is a thing that can be applied in many ways, to meet a great variety of conditions. It may be used to any degree, with any stroke, with any club. You may side-cut either way a brassie shot around a tree, or you may side-cut either way a mid-iron shot around a tree, or you may put a little extra under-cut on a spoon shot to help clear a hillock. These suggestions are only illustrative.

Illustrations 342 to 356, page 211, show an undercut cut-shot played over a bush, and shows almost the maximum possibilities in elevating a ball at a sharp angle.

The pitcher is used. The abnormal principles employed were to off-set the club face, and drop the handle. Off-set means to *turn* the club face "off", i. e. back so that it has more loft. This alone would cause a slice, but not if we depress the club handle.

To elevate the ball at an abnormally sharp angle you try to cut the club face more under the ball than usual, striking the ball at a point more underneath than ordinary circumstances would call for. Use a smooth faced club.



ACTION PICTURES

The Elevating Undercut-Cut-Shot-Stroke, in Motion Picture Series

CURVE-TO-RIGHT-CROSS-CUT STROKE

Scientific Stroke

To curve a ball sharply to the right to circumvent a tree or other obstacle, aim to left and swing the club in a course across the line of play swinging club down outside line of play cutting across to inside line of play.

At impact club face must be at "offset" facing somewhat to the right by having club handle somewhat ahead of the club head. Also hit off heel end of club face. Experiment alone can teach how much of each is required to produce a certain amount of curve in the ball's flight. See class 2 Slice, page 75.



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CURVE-TO-RIGHT-CROSS-CUT STROKE

CURVE-TO-LEFT-CROSS-CUT STROKE

Scientific Stroke

To curve a ball sharply to the left to circumvent an obstacle, apply the opposite principles given for the curve to the right. Aim to the right and swing club down well inside line of play cutting across to outside, with club head at impact slightly ahead of handle. Also hit off toe end of club face. See class 2 hook, page 77.



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CURVE-TO-LEFT-CROSS-CUT STROKE

PUSH-SHOT STROKE

Scientific Stroke

In the push-shot stroke, *push* means to strike the ball in such manner as to depress the ball's trajectory making it fly low yet with a lot of under spin on the ball so that it will drop dead when it lands.

To produce this effect, advance the swing center so that ball is struck just before club reaches the bottom of the arc of the swing. Strike a downward glancing blow on back side of the ball as if it were your intention to drive the ball into the ground at a very slight angle. The loft of the club will take care of the ball's trajectory, but it will not rise as high as it would ordinarily because of the beating down nature of your stroke. Always beat down to such an extent that you take a very considerable divot in front of where the ball rested.

The object of this stroke is to prevent head wind from retarding or carrying the ball goodness knows where.

Whereas one might play a 140 yard hole on a still day with a perfectly natural full mashie shot, with a strong head wind against you, the wiser thing to do would be to play *a half-swing-stroke push-shot with a mid-iron*.

Like *cut*, *push* may be applied to any degree, and used with any club and applied with any length of stroke. A little *push* applied with any club, produces a trajectory slightly lower than the club used would ordinarily produce. The stroke is a cut stroke, i. e. it is downward cut on the back side of the ball and since the ball is struck

before the club reaches the low point in the arc of the swing, the effect is to shoot the ball out low flying on a plane. The underspin causes the plane flight effect holding the ball in the air till its forward momentum is practically spent so that it drops almost dead on the green. The remaining back spin on the ball makes it act as if it had feet and it looks as if it had dug its heels in deep and sat down.

Many of our great golfers play almost every shot with either a little push or cut in the stroke. When one has mastered the stroke it is a great deal easier to shoot a ball straight on the line using a push-stroke than any other.



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PUSH-SHOT STROKE WITH CLEEK

· DEAD-STOP STROKE

· *Scientific Stroke*

Many players find it very difficult to cause a ball to stop dead, on the short pitch shots of approximately 50 yards.

The way to do this, is; to play a stroke which is a combination of, 1. the Push-Shot Stroke, 2. the Cross-Cut Stroke, cutting across the ball from outside the line of play before impact, to inside the line of play after impact, at a very pronounced angle.

The reason for applying the Push-Shot Stroke effect on the ball is; that when the club face comes in contact with the ball in the Push-Shot Stroke, it strikes a point high up on the back-side of the ball.

The higher up you strike on the back-side of the ball, the greater the speed of the ball's spin.

It is a popular, but erroneous impression, that the more you strike under the ball, the greater the speed of spin imparted, but this is not so.

The reason for cross-cutting the ball is; that by so doing one can swing the club at very much greater speed, thus imparting a very much greater speed of spin to the ball.

Because of the glancing nature of the stroke the ball does not go a great distance, yet because the club head is travelling at a great speed, a high speed spin is imparted to the ball. This kills its forward motion when it lands.

The ball rotates at a speed many times faster than the speed of its forward momentum.

Cut downwardly and crosswardly on the back-side of the ball, the finer you cut the stroke the faster you may swing the club, there will also be greater stopping effect on the ball.

Use a club with plenty of loft and sharp, rough corrugation on the face, so the club face will grip the ball and set it spinning as it glances by.

When the ball lands it will break to the right a yard or so, therefore you will have to allow for this, by playing somewhat to the left of the hole.

It is quite possible to impart a spin to the ball that will make it actually run backwards after alighting. Generally the ball does not run backwards till after it hits the ground on the second bounce.

Tho you may want to send the ball only 30 yards or so, nevertheless, swing your club with nearly as much speed as you would your driver for 250 yards, but cut the stroke across the line of play at so great an angle and just barely touch the ball with the club face so that it cannot be sent very far, yet, so that the terrific speed of the club head is imparted to the ball in the form of spin.

By this stroke many a ball has been played onto a green sloping away from the direction of play, and the ball has been made to run backward two or three feet, climbing the slope.

SHORT-JUMP-OUT-EXPLOSION-STROKE

Scientific Stroke

The short-jump-out-explosion-stroke is used for extracting a ball from a sand hazard which is at the very edge of the putting green, if the ball lies in a heel mark or other depression close up against a steep face and therefore can not be cut out clean.

Always use a full swing when playing explosion strokes. Never swing half heartedly. Hit the sand immediately back of and under the ball a more or less downward chop blow, so that the force of the blow will cause an upheaval or explosion of sand which carries the ball out.

Do not try to follow thru but bury the club head in the sand under the spot where the ball lay.

Hit the *sand* within one inch of the ball. Do not touch the ball with the club. Let the rush of sand do the work. *Be sure to hit the sand hard.* Stand well ahead of the ball so that the stroke can be directed very much downward. See illustrations, page 226.

Regulate the distance the ball is to travel *by where you strike* rather than by the force of the blow.

If you hit the sand a hard blow within 1 inch of the ball, it should jump about 15 feet. Hit 2 inches back of the ball for 10 feet.



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THE SHORT-JUMP-OUT-EXPLOSION STROKE WITH NIBLICK



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SHORT-JUMP-OUT-EXPLOSION STROKE

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LONG-JUMP-OUT-EXPLOSION-STROKE

Scientific Stroke

The long-jump-out-explosion stroke is used to extract a ball from the far side of a bunker which is close to a green. The only difference between this stroke and the short-jump-out-explosion stroke is that you should *follow thru the sand* and not let your club stick in it. You should hit the sand under the ball just the same, and without touching your ball with your club, carry the stroke on thru as if you were bent on covering the entire putting green with sand. Since you are to follow thru, play the ball from opposite the center of the stance.

Whereas the short-jump-out-explosion stroke sends the ball a matter of 10 to 15 feet, the long-jump-out-explosion stroke will send it 30 to 50 feet, using the same force.

Use full, three-quarter, or half stroke, depending on conditions and distance desired, and scoop up sand with the ball. The club should begin to enter the sand 4 to 6 inches before reaching the ball. Scoop up sand to a depth of 1½ inch below the ball and follow thru. The sand between club face and ball acts as a cushion absorbing the club head shock without checking its momentum which insures a “get out” with a little distance.

When you want to get considerable distance out of a bunker, hit the ball of course, not the sand.

When the ball is found sitting up nicely teed, or lying very clear on hard smoothly packed sand, it might be better to *chip* it out with a pitcher or mashie, playing a loose-wrist-chip stroke.

The niblick is generally the best club to use in a bunker, tho not always. It depends on what you have to do and how the ball lies. Sometimes it is best to use a putter.



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BUNKER SHOT LONG-JUMP-OUT-EXPLOSION STROKE

BANK SHOT

Scientific Shot

The *bank* shot is an extremely useful shot under certain conditions; for instance, (a) the hole is close to your edge of the green, (b) the green slopes down grade towards the hole, (c) there is a gently rising bank leading up to the edge of the green, (d) your ball is at a little distance from the bank. See Illustration 378.

To pitch a ball onto the green and have it stop at the hole would be extremely doubtful, therefore the wise thing to do would be to bank the ball against the slope and thus have it run up the bank onto the green with just enough speed so that it will trickle down to the hole.

Frequently the ball may be found lying even in a hazard where to play this shot would be the only practical thing to do.

In playing this shot the player must estimate the resistance of the bank or slope and strike with sufficient force to make the ball bound upward or run upward onto the green.

The shot may be played with any straight face club, such as the driving-iron. I think however, the putter is best.



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BANK SHOT from out of a bunker



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BANK SHOT from off the fairway



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BUNKER STROKES

A variety of strokes may be played from bunkers depending of course on conditions.

- 1 The short-jump-out-explosion stroke.
- 2 The long-jump-out-explosion stroke.
- 3 The spared-loose-wrist-action-swing-under-cut stroke.
- 4 The stiff-wrist-arm-and-shoulder-swing stroke.
- 5 The running-out stroke with putter.
- 6 Angle shots can also be played from bunkers, see contents.
- 7 If the ball lies well and distance is desired play a quarter, half, three-quarter, or full-swing stroke with any of the approach clubs depending on conditions and requirements. Even a full-swing stroke with a brassie or spoon may be attempted if conditions are favorable.

CROSS-WIND STROKE

Scientific Stroke

For Intentional slicing and hooking to counteract cross wind, hit off toe or heel of club face. When wind is blowing across from left to right, hit off toe end of club face for hook. When wind is blowing across from right to left, hit off heel end of club face for slice.

This is the best way to cause curve because it comes into effect when needed, i. e. at the tail end of the flight.

When playing against the wind, play the push-shot stroke.

If the wind is blowing a gale in your teeth and the way is free of obstacles, deliberately half top the ball, and it will run like a rabbit.



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Punching it into the teeth of a head wind

HILLSIDE STROKE UP GRADE

When playing an up-hill stroke, simply ignore the earth's natural perpendicular and stand perpendicular to the slope of the ground from which you have to play. Have the ball well forward opposite the left foot, and otherwise endeavor to swing in the natural way as far as possible. When playing up-hill you will naturally lean down-hill, therefore the greater part of the body weight will be on the right foot. Use a club with very little loft in order to avoid skying the ball.



PLAYING AN UP-HILL STROKE

HILLSIDE-STROKE DOWN-GRADE

When playing a down-hill stroke, simply ignore the earth's natural perpendicular and stand perpendicular to the slope of the ground from which you have to play. Play the ball from more nearly opposite the right foot, and otherwise endeavor to swing in the natural way as far as possible. When playing a down-hill stroke you will naturally lean down-hill, therefore the greater part of the body weight will be on the left foot. Use a club with sufficient loft to raise the ball well. Here the spoon brassie is very useful.



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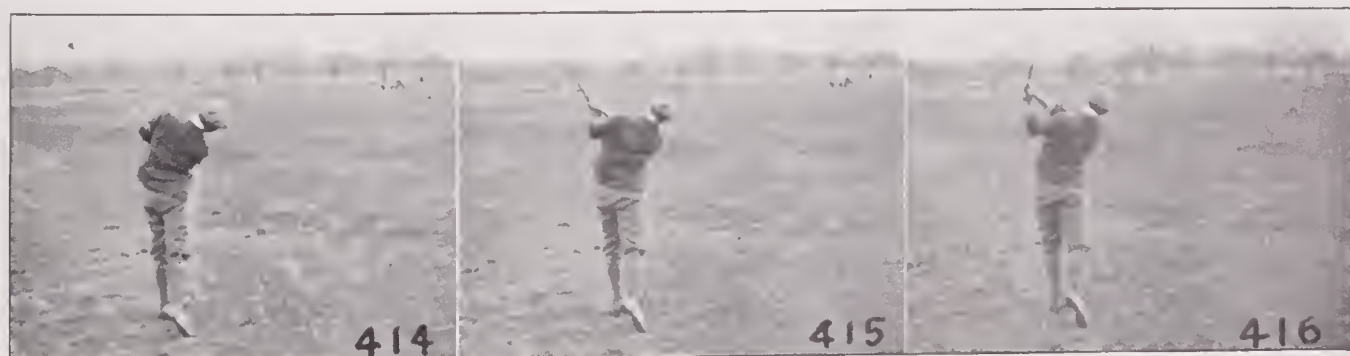
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PLAYING A DOWNHILL STROKE

HILLSIDE STROKE

Ball Above Level of Feet

When the ball is above the level of your feet, take a short hold of the club, stand well away from the ball, and make a flatter swing than usual. Look out for a hook and allow for it by striking a little inside the center of the club face.



HILLSIDE STROKE BALL ABOVE LEVEL OF FEET

HILLSIDE STROKE

Ball Below Level of Feet

When the ball is below the level of the feet, take a long hold of the club, stand nearer to and more over the ball, and make a more upright swing than is usual.

Look out for a slice, and allow for it by striking a little outside the center of the club face.



HILLSIDE STROKE BALL BELOW LEVEL OF FEET

ANGLE SHOT

Scientific Shot

The angle shot sends the ball off at an angle from the direction of the swing.

It sometimes happens that the ball lies in an awkward position, as for example in a wagon rut not running in the direction of the hole and so narrow and deep that it would be impossible to swing the club in the direction of the hole and at the same time hit the ball. It is frequently possible nevertheless to send the ball in the desired direction by facing the club toward the hole and swinging it in the direction of the course of the rut. The ball will go in the direction the club faces and not in the direction in which the club is swung. Such conditions are met quite frequently and the difficulty overcome by use of an angle shot.



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ANGLE SHOT

LONG PUTT STROKE

The all-important essentials of good putting are:

- 1 *Proper Line of the Putt and Proper Angle of Club Face Thereto.*
- 2 *Touch, or Proper Form of Propelling the Ball.*
- 3 *Mind, or Proper Psychological Concentration.*

1 On undulating greens, the line to the hole is not always perfectly straight. A player should make it a habit to walk to a position 10 or 12 feet behind his ball as he walks on to the green to play the putt. Dip down for an instant and study the putt. From this low position and *with eyes level* undulations of the green can be seen that are quite invisible to the player who steps right up to the side of the ball and plays. Side slopes and little inequalities of the ground are not so plainly discernible as from the low rear view. The beginner when asked to do this frequently says: "But this means nothing to me". Quite so, and it never will if you do not do it and learn to see those little things which affect the ball's course enough to make you just miss your putt.

Seeing the line of a putt has for the experienced golfer a meaning entirely different from that which the mere word conveys to the beginner. An experienced player might look at a putt, and look again and again at it and remark: "I cannot see the line of that putt to save my life". Then all of a sudden he might burst out with, "Ah, I see it now". When he does see it, it becomes as vivid to his eye as tho it were drawn out in whitewash. The beginner sees the ball and the hole and that's all. He

is not able to visualize a vivid picture of the course over which the ball must be sent if it is finally to drop into the hole. That is what we call "seeing the line of the putt". The beginner cannot see the line of a putt because it is a thing which can be learned only by experience. The point I wish to emphasize is the necessity of learning to see the line of the putt by studying the ground and watching results. The only position from which one can properly study the ground and likely line of the putt, is the one shown in Illustration 433.

Should the ground slope to the left, the player must play accordingly somewhat to the right of the direct line to the hole, as the ball will always work its way down a slope. Frequently there is a combination of slopes, one offsetting the other somewhat. A case of this kind calls for very accurate judgment. If the slopes be equal the first slope will effect the ball's course less than the second, because of the difference in the ball's speed.

When you have decided as to the line, the next thing is to set yourself in position so that you will swing your club in the proper course relative to that line. Also set the club face so that it faces at a proper angle to it: *square*. Tho you will find some good players putting off the toe of the putter face, common sense dictates that we should aim to strike with the center of the club face, as it is the only true center of gravity.

2 *Touch*. In the long running up putts, the ball should be struck a *sweeping* blow, following thru in a straight line, with club face kept square to intended line of play.



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Studying the line of a putt

3 *Mind or proper psychological concentration.* The chief cause of failure to putt well is due to the fact that most players take it too much for granted that just because they have set their putter square and set themselves to swing the putter in a certain line, that they will *keep the club face square, and swing it along the proper line.* In 99 cases out of every 100, bad putting is caused by sheer neglect of, or lack of proper automatic control of the putter head. As they are about to hit the ball they look up as if in anticipation of the ball going astray or the hole running away. The hole cannot run away and you cannot influence the ball's course with your eye after you have hit it. The mind must not be occupied with the thought, "I wonder if I am going to miss this one". Because of this thought you look up in a way as if afraid the hole would run away, or as if you could change the ball's course if it did not happen to be right. Think of the things that will insure your *sinking* it, i. e. proper control of the putter head, that is what puts the ball in the hole.

While a student of the game is going thru the period of learning to putt, i. e. putting by mechanical theory, a good look should be taken at the ball, then at the hole, and finally at the ball again; thus getting the proper physical and mental "set" for the putt. The student should not look at the hole or the ball as it travels towards the hole, but keep the mind deeply engrossed on what is being done with the putter head. This applies to the learner and not to the finished golfer who has already mastered the art of putting. For the learner it is better to listen for the sound of the ball dropping into the hole



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LONG-RUNNING-UP-PUTT STROKE (Running up a 40-footer)

than to look up to see it go in. The student has so much to think of while learning to putt that there will be no thought to spare for anxious anticipation as to the result.

You must remember it is the *putter head* that puts the ball into the hole, therefore while learning to putt, it is the *putter head* we should watch. I do not mean that you should watch it with your eye, but with your mind. *Think of it* and what you are doing with it. Look at your ball, and as you look at it, think of what you are doing with the club head. *Think to keep the club face square, and think to swing the club along the line determined on.*

I have many a time had a crack player come to me and say, "I cannot putt any more. I used to be a good putter, too". On close observation I found he was holding his putter right, and standing properly, and the like, but he had lost automatic control and was not concentrating on what he was doing with the club head. The club head would be set properly and the correct line was being found but when it came to making the stroke the club head would be travelling in the wrong direction. Perhaps the club face would be facing wrong too. Of course under such execution of the putting stroke no one could putt well.

Just because you have set the club face at the right angle, and determined the proper line along which to swing the club, do not for a single instant think that you have a guarantee that you will keep the club face facing right or that you will swing the club along the line determined upon. Until you have gained perfect auto-

matic control *you must think to swing the club along the line and to keep the club face square.*

It is foolish to think that there is any one particular style in which to putt. For position, the beginner might well be guided by the illustrations shown.

Aside from all matters of style we may say there are two ways of putting:

- 1 *By Mechanical Theory*
- 2 *By Intuition*

Practically all star players putt by intuition, but all the star players who became famous for their wonderful putting ability developed their putting sense on good sound mechanical theory. Therefore, I say, learn to putt by aid of mechanical theory so that your stroke will be correct. When this has become a habit and your ability to putt is developed forget theory and concentrate on the thing to be done, i. e. put the ball into the hole.

In the long putt stroke the chief thing is correct distance. If one makes a special effort to get the strength of the stroke right rather than the line, there will be fewer greens on which 3 putts will be taken than when line is made the chief thing. On a 30 or 40 foot putt if your ball is anywhere within 2 feet of the proper line and has just the right strength, you may consider yourself dead to the hole, i. e. sure of holing out on the next stroke. On the other hand if you make a special effort for line you may find yourself ten feet short or over the hole.

There are two entirely different ways to swing the putter:

- 1 *By a Wrist Action Stroke*
- 2 *By an Arm Action Stroke*

Wrist action strikes the ball a tap, while the arm stroke strikes the ball more of a shove.

I think there is no question that it is easier to gauge the proper strength to send the ball a given distance by the arm shove stroke than by the wrist tap stroke, and certainly it is much easier for the learner.

Sometimes I putt by wrist action, at other times by arm action, depending on how the inspiration leads me. If I am putting badly one way, I try the other. If that does not work, I change my style of putting. If that fails, I change my club!

In putting the putter head should follow thru; yet I have seen one of our great golfers in a spell of bad putting, violate all ethics of putting to the extent of taking a driver and striking the ball a stabbing blow. He thereby accomplished some remarkable results. They did not last long, however, and the funniest part of it all was that when he returned to his putter again, the extraordinary act had apparently caused a mental reaction which restored his proper putting touch.

When putting sense and inspiration desert me I resort to putting by aid of mechanical theory.

SHORT-PUTT STROKE

All that has been said concerning the long-putt stroke applies to the short-putt stroke except putting essential 2 *touch*, or form of propelling the ball, and special attention to line rather than to the strength of the stroke.

In playing short putts, do not strike the ball a sweeping stroke, but a distinctly *pushing* stroke. Swing the club back the very shortest possible distance that is practical, and carry the stroke thru twice as far forward as you swing it back. This will materially help you in producing the *pushing* like effect in the stroke.

The reason for striking the ball a pushing like blow is that the proper force required to send the ball the desired distance is far more easily controlled.

It is a very common practice to *tap* the ball in putting, and this very *tapping* is why a great many players are not able to get the right strength into their putting strokes. A tap stroke, and especially a tap stroke that is made with wrist action, is very liable to send the ball too far. Then in fear of repeating this, the player will probably underestimate the next putt with the result that the ball is sent only half way to the hole. For this reason I strongly condemn the use of wrist action in putting, and advise using arm action coming either from elbow joint or shoulder. A very careful study of players who are famous for their putting revealed the fact that all use one form or the other of the arm stroke, not one of them taps the ball with his wrist. According to this, then, play all putts with arm

action, long putts and short, the only difference between them being that the long putts should be struck a sweeping stroke while the short putts should be struck a pushing stroke, and your ability to get the required distance will be much more reliable. Resort to a wrist action stroke only when in great despair.

Should a weakness for missing short putts develop, concentrate on four essential points:

- 1 Think hard while playing stroke to keep putter face square to the line to the hole.

- 2 Think hard to make putter head swing in an absolutely straight line toward the hole.

- 3 Be sure to strike ball a shoving stroke (shove or push it into the hole).

- 4 Half top ball or strike it a pulling up stroke to make it roll.

If you are missing short putts it is because you are failing in some one or more of these four points; *don't look anywhere else for your troubles*. A change of style might bring about a momentary improvement, but it will not make you a consistently good putter.

In putting use the stiff-wrist-arm-and-shoulder-swing Chip-Stroke Grip. Let the right hand be the complete master of the club, and grip firmly with it. Better still overlap the forefinger of the *left* hand on the little finger of the *right* hand; this is called "the reverse overlapping grip".



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Putting by mechanical theory. Note in Illustration 441 the eye is still looking at the point where the ball lay, because the mind is still thinking of the control of the putter head

In the long-putt stroke special attention should be given to force of stroke rather than line. In the short-putt stroke special attention should be given to line — force should take proper care of itself.

As in the long-putt stroke, learn to play short putts by mechanical theory and in this way develop correct putting habit. Finally forget theory and *place the ball*.

One famous putter was asked, “How did you become such a good putter?” The answer was, “I practised putting one hour every day for ten years.” He certainly applied the twentieth fundamental.

Not long ago a prospective pupil said to me, “How did you learn to drive so consistently far and sure?” An old golfer standing by answered for me, “Oh, that’s easy. All you have to do is drive balls all day long for 40 years as Dunn has done and you can do it!”

I was afraid this was going to discourage my prospective pupil and I was about to explain when she remarked, “Well that settles it. I shall at once take up golf. I have been looking for some diversion that is really worth while, something that will hold my interest in a healthy occupation as long as I live.” “Madam,” I remarked, “You will become a fine player. Your remark shows the right spirit for the game.” In her remark I saw:

INTELLIGENCE
 DETERMINATION
 COURAGE
 and
 WILL POWER



SHORT-PUTT STROKE in motion picture series

PITCHING OVER A STYMIE

Scientific Shot

In playing over a stymie, simply play a very short-stiff-wrist-arm-action-swing-pitching-chip stroke with no follow thru.



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Pitching a stymie

A FEW PROPER STANDARD RANGES

STROKE EFFECT

Full stroke with Pitcher produces 100 yds. Pitch without run.
3/4 " " " " 85 " " with minimum of run.
1/2 " " " " 70 " " " " " "
1/4 " " " " 55 " " " " " "
Chip " " " " 40 " (and less) " " "

Full stroke with mashie produces 140 yds. Pitch without run.
3/4 " " " " 120 " " and run.
1/2 " " " " 100 " " " "
1/4 " " " " 80 " " " "
Chip " " " " 60 " (and less) " "

Full stroke with mid-iron produces 180 yds. Pitch without run.
3/4 " " " " 155 " " and run.
1/2 " " " " 130 " " " "
1/4 " " " " 100 " " " "
Chip " " " " 75 " (and less) Practically all run

Full stroke with spoon brassie.... 210 yds. Long carry, little or no run
Full stroke with driving brassie.. 230 yds. Long carry, medium run
Full stroke with driver..... 250 yds. Medium long carry, long run



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Finish of a stiff-wrist-arm-and-shoulder-chip stroke

THE SCIENCE OF GOLF CLUBS

The oft quoted saying "It isn't the gun but the man behind it", is very true, but of what use is the man if the gun is seriously defective? The same applies to golf clubs. Give ever so good a player a defective or unsuitable club and he is handicapped and correspondingly more so if his whole set is inefficient. Since the different kinds of strokes in the game are many, and to excel, they must be used in endless variety, the clubs are very important. Since there is such a vast variety of ranges and character of flight to the many strokes, it is necessary to have an equipment which makes it possible to produce every kind of stroke.

The ranges vary from a one-inch putt on the lip of the hole, up to a 250-yard drive. Beside distance, if the ball is raised from the ground, height of flight must be considered. When trying to gain greatest possible distance from the tee, the first question is force and direction of wind. If with you, then by all means play the ball high because it will go further, but if against you, play low. The wind is only illustrative. There are many other elements affecting height of play, i. e. rising ground in front. Since usually the lower the flight the longer the drive, how low can it be made and yet clear that rise in front of us? To meet these conditions, I have three wooden clubs in my set: driver, brassie, and spoon, all identical except in the loft to the face, and this difference is sufficient to alter the elevation of the flight and the range by 20 yards between each club. The driver sends the ball on a very low trajectory, conse-

quently its carry is not very far, but the ball will run as if it would never stop. This is, of course, the stroke when wind is against you because the wind does not get such a grip of the ball when low as it would were it high, and the ball fairly eats its way along the ground. Suppose, however, the wind is with you, nothing can be gained by keeping the ball low, while if you give it a fairly high flight the wind will help it, and you will get considerably more distance than if you play low. Some think it needless to have two clubs, that all one has to do is to tee low for a low flight and tee high for a high flight. That theory is very wrong, because to get the maximum range from any blow, the ball must be struck exactly with the center of the club face. If you play with a specially high tee you strike above that point; if with a specially low tee, below it, thereby losing much power.

Among other peculiarities, a golf club possesses a face, heel, toe, neck, sole, and so forth. The face is the striking surface, the outer half is the toe end, the inner half is the heel end. All players know to their sorrow what it means to hit too much on the heel or toe of the club face. Just as much power is lost by hitting too high as too low. Moreover, it is a bad trick. It is far better to cultivate hitting with the center of the club face only, and to produce the elevation desired by using clubs of different degrees of loft. So when playing with the wind, do not think that just because you are driving from the tee you must use your driver. That would be quite absurd. The driver should have very little loft, and you should train yourself to produce nothing but low flights

with it. Then, when you want to drive a low ball against a wind, you take out a club with which you associate only low flights, swing naturally and normally and the club attends to the elevation for you, your care being only to hit the ball absolutely true and clean. The standard of play is now so high that to excel it is necessary to be more exacting and systematic and to make the most of every aid such as that just explained. Old slipshod ways will no longer win. The spoon is used when an unusually sharp rise or hill confronts the player. This club, as I make it, has a degree of loft that will elevate the ball at the same angle as a driving iron. As it is constructed on the lines of a driver, it has 10 yards more range than the driving iron, thereby, frequently enabling a player to make a green over a sharp elevation with one less stroke than without it. The old fashioned spoon was practically a wooden mid-iron, but my design is an entirely new idea with an old name, and is intended to produce the greatest possible distance with sharp elevation.

With the iron clubs I work on the principles of *trajectory* to range the flight. Since many of our modern courses practically surround their greens with deep sand traps, in approaching we must be able to carry to and stop at all sorts of ranges, and we must be able to control these ranges so that we can stop within ten yards of any desired range. The practical ranges of carry are anywhere from the spoon 210 yards down. To have a complete set of ranges, there must be a club for each range, dropping down in 20-yard steps to 100 yards. Of course, the strength of stroke can be varied, but a club played

below its full power will not drop the ball dead on alighting. The normal range of a properly designed mashie, i. e. one with 35° loft is 140 yards. Played with normal full swing by an average good player, the ball actually will not roll more than 4 or 5 feet at that range. But play a three-quarter shot with it for a range of 120 yards, and the ball will alight 20 yards short of where it will stop. Play a half shot for a range of 100 yards and it will alight fully 30 yards short of where it will stop. With no trap on the edge of the green, and provided the undulation and smoothness of the ground be right, a half mashie shot for 100 yards would be all right, but not if there is a trap. Some professionals can perform many tricks and by aid of the under-cut-cut-stroke could stop the ball dead with a mashie at 100 yards range. But I do not propose to make jugglers of my pupils. Golf in its simplest form is quite difficult enough. Even the professional, who plays the under-cut cut-stroke exclusively, courts unnecessary danger, as it is the most difficult of all strokes. Tho perfectly legitimate at the proper time, the under-cut cut-shot is so risky, even at best, that it is folly to use it when avoidable. One of our special aims should be to simplify our golf, not to complicate it. The proper stroke for 100 yards range, with a trap at the edge of the green in your line of play, is with a pitcher ranged for 100 yards. However hard you hit, if your stroke is true, your ball will go 100 yards and drop dead.

In the complete set designed for myself there are 12 clubs so arranged that each imparts to the ball both a certain range as well as a certain elevation of flight.

Of course, a club's range is determined largely by the power of the player, i. e. weak players will not obtain as long ranges as stronger players. Nevertheless, whatever the limits of a player's power, if his set is properly systematized, his clubs will have graded ranges, with no considerable gaps between the ranges of any two. A player should estimate the range of a stroke in so many yards and learn by practice which club to select for that distance, thereby making reasonably sure to be within 10 yards of the required distance. It is really surprising how consistently accurate a club is in dropping a ball at its proper range, while a player using a high powered club and trying to drop balls at a slightly shorter range is away off the mark most of the time. A player using the proper club may "hit" as hard as he likes, so long as he plays a legitimate stroke and hits the ball square in the center of the face, he cannot greatly vary the range. That uniformity is just exactly what is wanted. This makes it possible to play much more accurately than by forcing or sparing a club's normal power to any great extent. This nearly always results in disaster. Of course, if the pitch of a club is altered in any way by a trick in the handling, the ball's trajectory will be changed and therefore the range also. Don't play tricks. To become a winner, simplify your play.

My set of clubs consists of the following:

Clubs	Normal Pitch of face	Standard Range, Yards
Driver	10°	250
Brassie	15°	230
Spoon	20°	210
Cleek	15°	220
Driving-iron	20°	200
Mid-iron	25°	180
Jigger-iron	30°	160
Mashie	35°	140
Mid-Mashie	40°	120
Pitcher	45°	100
Niblick	40°	100
Putter	10°	...

When I have a range of 140 yards I take the mashie and give the ball the full power of my swing. If the range be 120 yards, then it is a full mid-mashie shot. If the range be between any two, perhaps 130 yards, I can take my choice of either mashie or mid-mashie and be within 10 yards one way or the other. The ball in both cases lands with practically no run. For little shots of less than 100 yards, one enters into the variations of the swing such as chip strokes, quarter strokes and so forth and any one of the seven approach clubs might be used in little shots and this would be determined by kind of shot required. If it be desired to pitch or toss the ball on to the green, one of the more lofted clubs would be used. If it be desired to play the ball on to the green runningly,

then one of the straighter faced or less lofted clubs would be used.

While the above set of clubs is a complete set and all should be found in a good player's bag, for the average player the driving-iron, jigger-iron, and mid-mashie are sometimes omitted. The remaining clubs are known as a three-quarter set. A beginner needs only a half set in which there are seven clubs:

- 1 Driving Brassie
- 2 Spoon Brassie
- 3 Mid-iron
- 4 Mashie
- 5 Pitcher
- 6 Niblick
- 7 Putter

Club 1 This gives the beginner a driving brassie with which to drive. It is an easier club to drive with than a driver, owing to the more lofted face. It is easier for the beginner to get the ball to rise into the air. To make the ball rise with a driver, requires a tremendous wrist action which only the more or less advanced player has developed.

Club 2 Of the half set, the spoon or spoon brassie, as it is sometimes called is given to the beginner because it is easier to get the ball up out of the grass with it than with the regular brassie. As the beginner is more likely to be troubled with getting the ball to rise, the advanced player is more likely to be troubled with having it rise too high. So, as a player progresses, these two clubs

ultimately find the proper places in the set when the player acquires a three-quarter set.

Club 3 Of the half set, the mid-iron is used for long, medium low trajectory approaches. This is the club with which everyone should begin to learn, as it is the easiest club to use in the entire set. Beginners should not attempt to use any other club till they are master of the mid-iron.

Club 4 Of the half set the mashie is used for medium long and medium high trajectory approaches.

Club 5 The pitcher, is used for high trajectory, short approaches.

Club 6 The Niblick, is used for getting out of bunkers.

Club 7 The putter, for play on the putting green.

The power or range of the approach clubs is fixed by:

- 1 The amount of loft or angle or slope given to its face.
- 2 The length of the shaft.
- 3 The weight of the club head.

So a player will hit as hard in sending a ball 100 yards with the pitcher as he would in sending it 250 yards with the driver. This applies to all the clubs for producing their intended ranges. Of course, a player will vary the force of his blow too, by playing three-quarter, half, quarter and chip strokes, etc.; and these various strokes, three-quarter, half, etc., can be used with any of the seven approach clubs.

You can now begin to see what a tremendous variety of strokes can be played. We have five different simple approach strokes which we may use with any one of seven different approach clubs. Seven times five equals thirty-five different results. Add to each of these thirty-five results a little “cut” or a little “push” of any desired degree, and the number of resulting effects are absolutely endless. You may chip on to the green with a pitcher, or it may be better to do so with a mashie, as the pitcher might drop the ball on an undesirable spot, the side of an undulation that would deflect the ball from its course, for instance. Perhaps even the mashie may not be the best club to use under certain conditions of undulation. Perhaps, it may be better to chip the ball up to the hole runningly, in which case you may use one of the straighter faced clubs such as the mid-iron, or the driving-iron, or even the cleek. The jigger-iron is a very nice club with which to chip up to the hole, but it may give the ball a little too much or not enough pitch for some conditions. Since all clubs are different in respect to the amount of loft to the faces, so will the effect upon the ball be different. So many little differences of conditions will be met that just a certain one of those five strokes applied with a certain one of those seven approach clubs, with perhaps a certain amount of “cut” or “push” may give you just the kind of shot you want!

I could classify no less than 245 distinctly different and definable approach shots alone. Then, too, there are many other shots besides approach shots.

The point I wish to emphasize is that every club has a definite range of its own, and that it is desirable to have several clubs of different ranges, because it is generally better to play the ball so that it will "carry" almost the entire range and stop dead on alighting. It is generally safer in the air than bounding along the ground and perhaps into some hazard. A proper complement of clubs makes it possible to produce these carrying ranges to a closer margin. Hence, the need for so many clubs.

While most approach shots should be of the "carry all the way" order, this shot should not be used exclusively; for every variety of shot including the running up approach, the pitch and run, the pitch, the cut, the push, the jab, the explosion, and all should be played in full, three-quarter, half, quarter and chip variety as conditions may require. All should be used in their proper place. My set contains a fitting club for each of the possible shots.

The ranges of my several clubs are in systematic order, and a correct system is applied thruout the other details of my set. In many sets this is conspicuous by its total absence and is largely the cause of lack of progress in the player's game. While there are also many other important points, there are fourteen variable principal points for the player to consider in a club. Classified they are:

Relative to Head

- 1 Head weight
- 2 Degree of loft

Relative to Shaft

- 3 Shaft weight
- 4 Density of wood fibre
- 5 Degree of flexion
- 6 Finished amount of spring
- 7 Diameter of shaft at top and bottom
- 8 Power of shaft

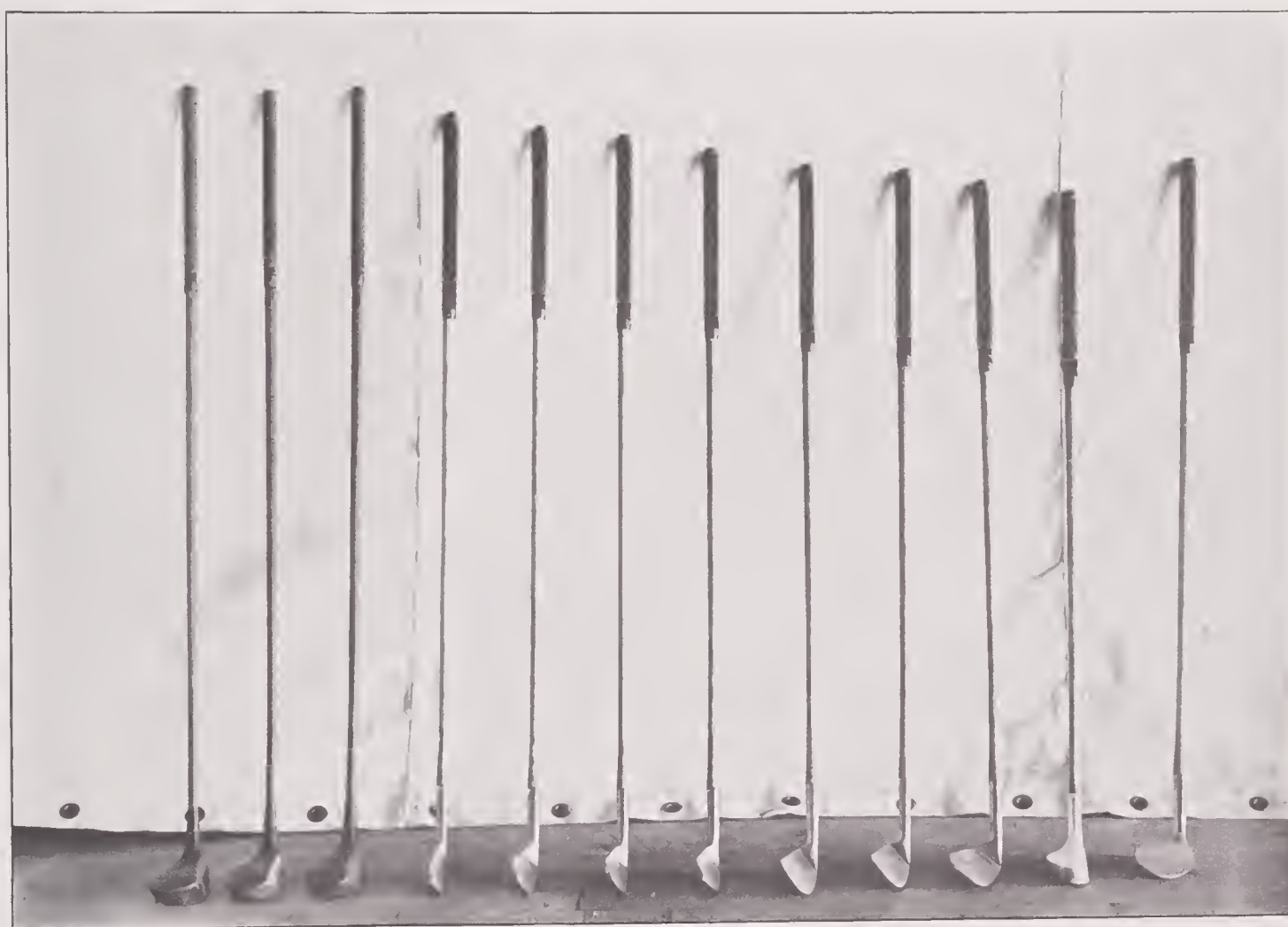
General

- 9 Total length of club
- 10 Total weight of club
- 11 Angle of shaft to head
- 12 Balance point
- 13 Diameter of grip
- 14 Character of materials

These factors should be varied to suit each player and for every club of a set, since no two clubs should be alike in power. Yet every detail of every club must be in perfect systematic order so that each club will correspond in every respect, not only with its owner, but also with its fellow clubs. Many players have in their sets, clubs that do not correspond with each other at all. One demands one style of play, others another, while perhaps the owner is capable of producing neither. The reason for so much lack of system in sets is due to buying

one club here, another there, without a thought of systematizing the set—doubtless because the player did not know how.

Since no two players are alike either in height, weight, strength, age, style of play, or other details, clubs should be variously designed to suit the individual differences of the endless variety of people. Therefore to equip a player properly with an outfit likely to produce the best results is not only a very complex but also a very difficult problem. Only one competent to analyze personal requirements should undertake to choose clubs for a player, especially for a beginner. By starting with clubs of wrong proportions the player is forced to adapt himself to mis-fits which will in all probability handicap him permanently, for it is not easy to change an established style of play. It is far better to consult an authority on the matter at the outset and be on the safe side. I believe I have made a more exhaustive study than any other man of this very subject in twenty years of scientific thought and extensive experiment. As a result I have evolved a systematic means of determining exactly what a player ought to have for best results. Study my Golf Club Chart attached to rear cover.



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Seymour Dunn's set of golf clubs

MEASUREMENTS

Name Seymour Dunn

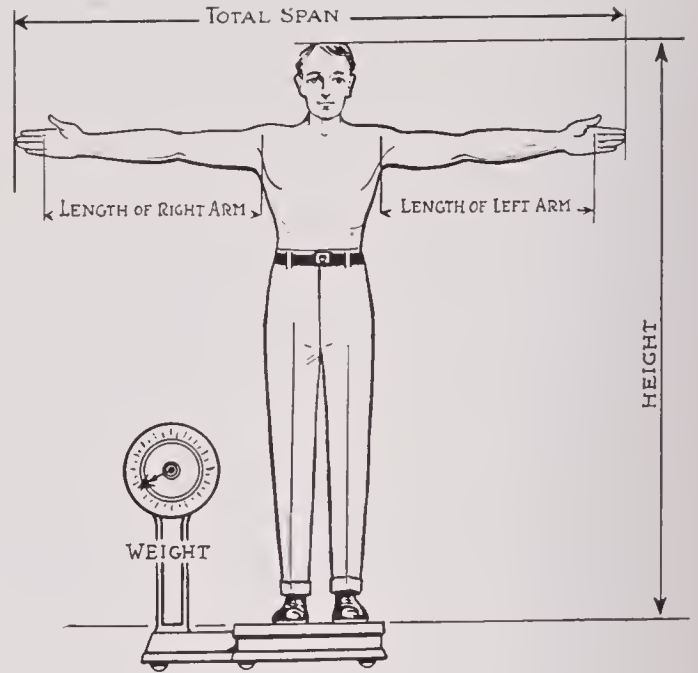
Address Lake Placid

New York State

U. S. A.

.....

Date March 11/1920



(1) Are clubs intended for man or woman? Man

(2) Are clubs intended for a beginner, medium, or advanced player; if the latter, state handicap Advanced

(3) State age 38

(4) Height in golf shoes 6 feet 0 inches

Height rating 5—10

(5) Weight 215 lbs. dressed

Strength classification Extra strong

(6) Length of each arm from center of shoulder joint to fork between first and second finger { right Arms are the same length and in proportion to shoulder breadth.
left

(7) Palm side length of second finger of each hand { right arm Fingers are normal length.
Left arm

(8) Total span of arms extended tip to tip. 6 feet 3 inches.

(9) What is the general physical strength; weak, medium strong, strong, or exceptionally strong? Extra strong.

(10) What is the strength of the hand, wrist, and forearm muscles; weak, medium strong, strong, or exceptionally strong? Extra strong.

(11) Are the clubs to be right or left handed? Right handed.

(12) Are club handles to have rough or smooth grips; dry, oiled or waxed leather? Rough oiled.

(13) In what method of grip are clubs to be grasped; finger grip or palm grip? Finger.

(14) Is the swing inclined to be flat, upright, or orthodox? Orthodox.

ORDER FORM

ORDER NO.

SEYMOUR DUNN

GOLF CLUB MAKER

LAKE PLACID, N. Y.

To be shipped date

Order received date

From

By { Freight { Prepaid
Express { Collect
Post {

To address

State with or without steel insert in face of wooden clubs.....

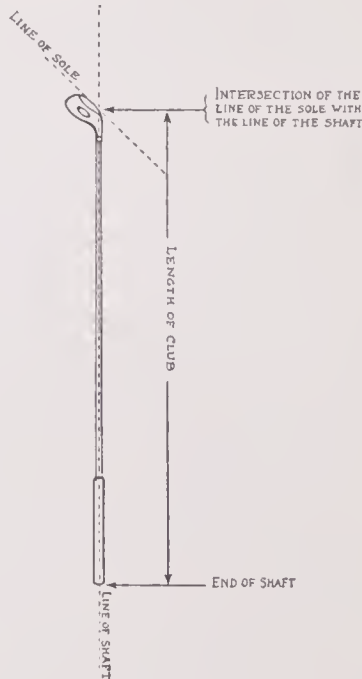
MAKE THE FOLLOWING CLUBS

Quantity	Length and Weight	Model	Price
.....Drivers	* †
.....Brassies	* † ‡ §
.....Spoons	* † ‡
.....Cleeks	* †
.....Driving Irons	*
.....Mid-Irons	* † ‡ §
.....Irons	*
.....Mashies	* † ‡
.....Mid-Mashies	* §
.....Pitchers	* † ‡
.....Niblicks	* † ‡
.....Putters	* † ‡ §

- * Clubs of the complete set.
- † Clubs of the three-quarter set.
- ‡ Clubs of the half set.
- § Clubs of the quarter set.

How to Measure a Club

Measure from the Club heel to the extreme end of the shaft. The true heel of a Club is where the line of the sole intersects the line through center of shaft. See diagram below.



Special remarks
.....
.....
.....

Charge to

Address

Signature of Purchaser

Copy_____

SPECIFICATIONS

M Clubs for Seymour Dunn's 1922 Set.

Order No._____

Address_____

Date_____

	Clubs are for Beginner Medium Player Advance Player	Man Woman	Club Right or Left Handed	Length of Club from Heel to Shaft end	Head weight; oz.	Angle of lie in degrees	Pitch of face in degrees	Spring of Shaft	Nature of Shaft Wood	Diameter of grip in 1-16 of inch	Diameter of Shaft Top and Bottom	Power of Shaft	Total weight of Club	Notes
Driver	Adv	Man	R.H.	42	7 $\frac{3}{8}$	53	10	14 $\frac{1}{2}$	Med	$\frac{13}{16}$	Med	Med Power ful		
Brassie	42	7 $\frac{3}{8}$	53	15	14 $\frac{1}{2}$	..	$\frac{13}{16}$	Med	Med Power ful		
Spoon	42	7 $\frac{3}{8}$	53	25	14 $\frac{1}{2}$	..	$\frac{13}{16}$	Med	Med Power ful		
Cleek	40	8 $\frac{1}{8}$	55	15	13	..	$\frac{13}{16}$	Med	Med Power ful		
Driving Iron	39 $\frac{1}{2}$	8 $\frac{5}{8}$	56	20	11 $\frac{1}{2}$	..	$\frac{13}{16}$	Med	Med Power ful		
Mid-Iron	39	9 $\frac{1}{8}$	57	25	11 $\frac{1}{4}$	Med Hard	$\frac{13}{16}$	Med	Power ful		
Jigger Iron	38 $\frac{1}{2}$	9 $\frac{1}{8}$	58	30	11	Med Hard	$\frac{13}{16}$	Med	Power ful		
Mashie	38	9 $\frac{7}{8}$	59	35	11	Med Hard	$\frac{13}{16}$	Med Small	Very Power ful		
Mid Mashie	37 $\frac{1}{2}$	10 $\frac{5}{8}$	60	40	11	Med Hard	$\frac{13}{16}$	Med Small	Very Power ful		
Pitcher	37	10 $\frac{5}{8}$	61	45	10	Very Hard	$\frac{13}{16}$	Small	Very Power ful		
Niblick	38	11 $\frac{3}{8}$	59	40	13	Flexible Tough	$\frac{13}{16}$	Large	Great Power		
Putter	36	9 $\frac{5}{8}$	64	10	15	Soft	$\frac{13}{16}$	Small	Weak		

Special Remarks Wooden clubs to have steel inserts in face, All iron faces

irregular dot corrugation.

Rough side of leather on the outside

Grips



453

Don't forget: Strong hands and wrists are most essential to the golfer. Be sure to develop your hands by regular exercise with a wrist machine

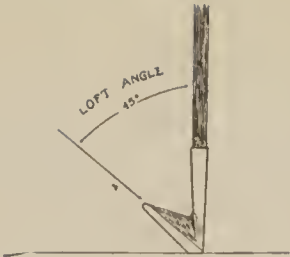
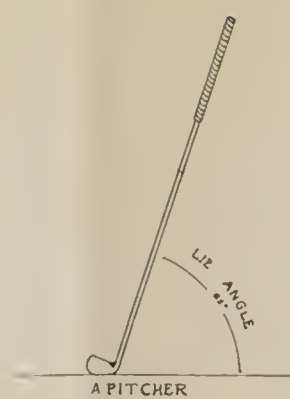
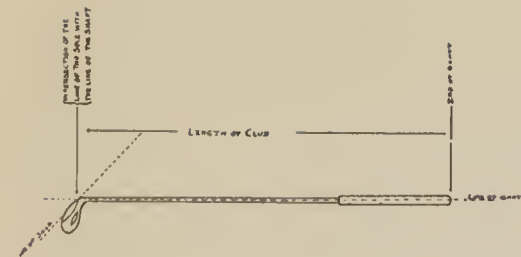
WITH SCIENTIFICALLY CORRECT SCALE OF CLUB LENGTHS, HEAD WEIGHTS, LIES AND LOFTS RELATIVE TO EACH OTHER, AND TO THE HEIGHT AND STRENGTH OF VARIOUS PERSONS

Add or deduct one-fourth of any difference between span and height to or from the natural height (in golf shoes), deducting one-fourth of excess of span from height. Add one-fourth of deficiency of span to height to arrive at RATED HEIGHT.

Seymour Dunn
Golf Expert

Consulting Greenkeeper

Measure from the club heel to the extreme end of the shaft. The true heel of a club is where the line of the sole intersects the line through center of shaft. See diagram.



Address: November 1 to May 1
LAUREL, MISS.

EXPLANATORY.—(°) stands for degrees of a 360 degree circle. Upper figure in the squares means length of club in inches, lower figures head weight. Where there are two lower figures, such as 72, first figure means ounces, second figure eighths of ounces; thus 72 means 7 and 2/8 ounces; 100 means 10 ounces no fractions.

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